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Tables and Diagrams should be selected as follows: Tables should be typed in double spacing on separate sheets. Figures should be prepared using a drawing aid, showing the dimensions in the appropriate reference. Drawings and views photographically should be submitted unaltered, retaining original profile. Tables and detailed explanations should be given in the report which should be based on a single set of data.

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Editorial

Aspirant are in the. Service of the Royal Naval Medical Service came to an end on 5 February 1984 when the office of Surgeon Commandant (Naval Medicine and Training) and Dean of Naval Medicine formerly based in HMS and was subsumed into the office of Surgeon Rear Admiral (Support Medical Services).

The post of Surgeon Commandant (NMT) and Dean of Naval Medicine was created on 10 May 1981 and his office established in Montagu House on the grounds of the Institute of Naval Medicine. From 1981 to 1983 Montagu House was the home of the Royal Naval Medical School and was commanded by a Surgeon Captain as Medical Officer in Charge. However, on completion of the structural exercise of restructuring recently then was taking place in April 1983 the Royal Naval Medical School was renamed the Institute of Naval Medicine and shortly afterwards a Surgeon Rear Admiral was appointed to command. This was Surgeon Rear Admiral James Wain who was also appointed as the first Dean of Naval Medicine (SRANMT).

Command to hold the Dean's office until 1 August 1983 when SRANMT was based in RM Hospital, Haslem.

It must also be recorded that Miss Audrey Martin who came to the RNM as Personal Secretary to SRANMT was in August 1979 and has continued in PR as a permanent staff member. Martin left the RNM on 11 February 1984 after over 12 years' sterling service. However, that unrivalled knowledge and experience will continue to be a valuable asset to the Royal Naval Medical Service, has not been lost as she has transferred to work as Personal to become Personal Secretary of NDMC.

Now, since again Montagu House is occupied by a Surgeon Rear Admiral as SRANMT, has transferred a Post from Haslem to SRANMT and Dean of Naval Medicine. This also underlines the importance of moving to the Royal Naval Medical Service continues to be accepted and given the high profile that a service.



Member of the Association of Service Newspapers

Trauma Anaesthesia — An American experience

G H Evans

INTRODUCTION

The management of severely injured trauma patients should be a matter of some priority during initial training of the specialist casualty anaesthetist. However, due to the relatively small numbers of severe trauma victims received at Royal Navy hospitals, the opportunities of dealing with such cases tend to be fragmented, with only limited formal training opportunities by the time the new casualty arrives. Even during accidents at teaching hospitals in the UK, exposure to major trauma cases is very limited and sporadic at best. Personally I felt quite unprepared to deal with multiple severely injured casualties as we called for the UK's first dedicated RFA Airco rescue recovery mission, training at the Advanced Trauma Life Support techniques of the American College of Surgeons and performing intensive casualty triage during exercises.

These deficiencies in trauma management and training at UK hospitals have been recognized, and the recommendations of a working party set up in 1984 by the Royal College of Surgeons include the setting up of regional trauma centres and that a larger number of operators, including anaesthetists, should take a more active interest in trauma management.

Many of these recommendations were based on trauma management systems in the USA, which have been shown in a number of studies to reduce trauma mortality rates. Trauma centres have been established following the recommendations of the American College of Surgeons

and graded from level 1 to level 5. Level 4 and level 5 centres have essential facilities well immediately available in hospital 24 hours a day. Level 1 centres also receive fatal, serious and moderate trauma. Level 3 centres are small district community hospitals capable of dealing with lesser injuries, with protocols for transfer to bigger regional centres when required. In general, 85% of all trauma cases are dealt with in community hospitals, with 80% treated at or below 2 facilities, and the most seriously injured 2% being treated at level 1 centres.

The reputation of trauma care in the USA has come about due to a very high incidence of trauma, the overall mortality from trauma being about 60 per 100 000 population — about 60% higher than in the UK. It has been estimated that there are more than 140 000 trauma fatalities and 50 million injuries annually in the USA.¹ The greatest number of fatalities are caused by motor vehicle accidents (MVA), which account about twice as frequently as in the UK, a surprising frequency which has remained the lower speed limit. However, the greatest disparity between the USA and the UK occurs in the number of homicides, which is much more common in the USA, and of which over 80% are firearm related.

Maryland is recognized as having one of the most sophisticated trauma systems in the world and it was to him that I looked to improve my trauma management skills. With the help of the then Consultant Anaesthetist in Anesthesiology, Stephen Cooper Mann, and Dr Peter Dinkler, a Consultant Anaesthetist at Level 1 trauma site on average 4 per month, according to the P. Adams County Shock/Trauma center, a level 1 facility in Baltimore, Maryland.

Colin G. Christensen Evans is a Canadian Anaesthetist at Royal Naval Hospital, Devon.

THE MARYLAND INSTITUTE OF EMERGENCY MEDICAL SERVICES SYSTEM (MEMSES)

The R Adams Cowley Shock Trauma center is one of the top level I trauma facilities in Maryland. The state has more than 50 other emergency hospitals offering 70 trauma units serving a population of about 4.5 million where 10 000 acute major and emergency medical care is coordinated by MEMSES based at the Shock Trauma center by radio link or paramedics in ambulances and helicopters from the various emergency centers (ESTC) (1985).

Maryland has no dedicated four-engine helicopter helicopters positioned around the state for medical purposes. These are operated by the Maryland state police which flight crew of two are fully qualified paramedics.

Crewmembers are alerted at the scene of the accident by state police or paramedics who may get dispatch orders to decide whether they require transfer to the nearest emergency hospital or by helicopter to a level I facility (Figure 1). Their decisions can be aided by the dispatch center surgeons at Shock Trauma, who direct radio links. The paramedics are highly trained

and skilled personnel who begin the initial resuscitation of patients within minutes of the accident. This may involve resuscitation, fluid resuscitation and neck immobilization on back boards with head restraint. This aggressive early treatment is one of the most important aspects deciding patient outcome.

THE R ADAMS COWLEY SHOCK TRAUMA CENTER

This is the major level I facility in Maryland named after R Adams Cowley, a cardiovascular surgeon who delivered most of his life to the pathophysiology of hemorrhagic shock and who coined the phrase 'the golden hour' following severe injury during which appropriate intervention can make the difference between life and death.

Shock Trauma is located on downtown Baltimore adjacent to the University of Maryland Hospital. It has recently undergone a major rebuild to provide a purpose built trauma facility, operating independently from the Greenway Hospital, a campus of USF hospitals which all are in constant care. There are split equally between general and trauma care. All



Figure 1. An aerial view of the methods by the Maryland State Police.

critical care beds are in a single track arranged in 12 bed rows joined a central nursing station. Each cubicle is fully fitted with artificial ventilation and physiological monitoring, and bed independently controlled with height. Casualties arrive either in the ground floor by ambulance, or by helicopter at the first and third helipads. Early phases of admissions are by helicopter and during the early disaster months all three options can be in use at one time. In 1982, over 4,500 trauma victims were admitted.

Patients are moved by lift to the upper reconstruction unit (TRU) on the second floor. This is a large room, where the recovery of all admitted legs with a raised trolley system. Each leg is comprehensively equipped with haemostatic, nerve, vascular, full monitoring equipment including mass spectrometry, a computer system for rapid access to laboratory results, and overhead lights (Figure 2). It incorporates the standard life-support systems for use and capable of movement into each rapidly fitted infection system (RIS) are present and ready for conversion, etc., and are capable of providing wound, closed, closed at up to 1,000 volume. Further level 1 facilities are available, capital, or infection rates of

500 million. Immediately adjacent to the TRU are further diagnostic facilities including CT scanning, angiography and ultrasound, and a suite of six operating theatres. These are run on a regular operating system from performing non-orthopaedic, orthopaedic, neurologic, facial, general and plastic surgery. Trauma cases are dealt with on a 24 hour basis. Staff working a shift system to meet any potential build up of waiting cases. One operating room is kept closed and set up ready for any emergency requiring immediate surgery. Each operating room has the same monitoring equipment as the TRU, and its own computer system for patient discovery and retrieval.

Also available elsewhere in the complex are two facilities CT scanners, an MRI scanner and a large closed hyperbaric unit. The hyperbaric chamber is a 20 person chamber with oxygen entry, walk in doors and is capable of taking either three standard and 12 standard patients, or 14 standard patients. The delivery of conditions treated with hyperbaric therapy is broader than that adopted in the country and although research has not proven clinical benefits in a number of conditions, some remarkable results have been achieved.

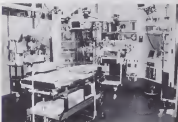


Figure 1. A casualty accepted by the British Reception Unit

TRAUMA MANAGEMENT AND RESUSCITATION

Initial aggressive resuscitation is begun by the paramedics as the field medics then followed by rapid transit to further definitive care. Interventions in Shocktrauma are coordinated by SHOCKM who advise the TBU of arrival time and give a brief synopsis of the patient's condition, mode of injury and interventions performed.

Patients are met on arrival by three staff members: an anesthesiologist, TBU nurse and technician. Patient management is started immediately, systematically CABCDE initiated by the paramedics being continued in the lab in the TBU. Once in the TBU, the patient is decontaminated, in the trauma team (Figure 3) consisting of physician, nurse, and technician (Table 3).

Resuscitation commences along effective trauma life support (ATLS) principles¹ and with no delay, and this occurs very rapidly. The resuscitation is aggressive for the severity of the patient and ventilation, however, is either in need or placement of them if the airway is secured. Early intubation is performed on major trauma victims by rapid sequence induction using

Table 3. Trauma Team Composition

Attending (Consultant) Trauma Surgeon
Team leader
Surgical Fellow
Attending Anesthesiologist
Certified Registered Nurse Anesthetist
Surgical Resident
TBU Nurse
TBU Technician
Physician Technician

displacement or larynx and succinylcholine. All patients are intubated to insure possible cervical spine injuries (and cleared by a ray and are stabilized by neck and shoulders with a line stabilization of the head by ng movement and no head axial rotation if ATLS suggests. No subsequent neurological deterioration has been demonstrated using this technique.

Blood is taken by a trained tech, this being drawn the apical access and loaded to a technician who places it on a dumb waiter to the laboratory on the floor above. Full blood count and electrolyte results are usually available on the computer 15 minutes within five minutes.



Figure 3. The team to treat a shock trauma is in the trauma bay.

and full water matching takes 20 minutes. Immediate blood for transfusion is held in the TRU. Eight parts of O-positive blood (not being available)

Intensive care beds have been converted and reserved as both areas and infection with crystallised heparin. For major haemorrhages 2 French gauge Cords (lines are inserted either on the femoral or subclavian veins as well) and can be attached to the Level 1 culture in the RIS. Can draw any perfusion on the replacement of any initial units of hyperbaric oxygenation percutaneous access. The RIS was originally designed for use in the liver transplant programme and has been successfully adopted for use in various circumstances. It requires a previous explanation to operate and a baseline examination of abnormal radiographic patients who often require two other radiographs. I was involved with a patient requiring 10 units of blood before the surgeons decided that the haemorrhage was uncontrollable. Then doctors would have been made a lot better had the RIS not been available. 2 cups of the normal open chest and open air taken within minutes of arrival. My other other waiting until the patient is a subacute CT of the abdomen and/or dependent posterior image is performed on numerous patients to replace subdiaphragmatic drainage. Abdominal being drained immediately without

Other surgical procedures performed in the TRU include neurophysiology and fluoroscopy. Gastroenterology is performed on patients in whom endoscopy has failed usually because of severe muscle-based trauma rather than gastric or local on NSA. Thoracoscopy is performed on patients in a one session used to assess damage for dissolving areas and pericardial carbon monoxide while fluid accumulation is considered. One case is most likely poor but this does not mean it is a disaster. Occasionally patients are taken directly from the helicopter to attendance in the emergency operating theatre where teams are standing by to operate immediately.

MILITARY FELLOWSHIP

For the six months considered I was designated a military anaesthesia fellow. This was based on established training of 16 military personnel. This means it was given the permission for ability to move around from 1990 to the operating theatre or ICU to operating on own clinical experience. Obviously I was supervised by attending anaesthesiologists however I was

given a large degree of freedom in clinical decision making and procedures. There is an attending anaesthesiologist in Neurotrauma, including a number of short post fellowship opportunities for senior exposure on one year contracts. There have also been a number of British Army of Royal Air Force anaesthetists on the case military fellowship scheme.

The work rate for the anaesthesia department is a shift system. Myself working either day or night shifts from 7 to 7. There were arranged so that I worked on average 16 shifts a month, half day and half night. During the day time was mostly spent in the operating theatre with leave in the TRU or the ICU when required. At night most of the admissions occur — but surgery begins in darkness. Intensive care staff open rooms for urban warfare between small gangs of drug dealers and clients. In February in 1991 there were 573 gunshot fatalities, with many more non-fatal shootings, and other forms of penetrating trauma. The volume and degree of trauma is usually shocking and very individual and something which cannot be adequately prepared for despite simulation in training.

Eventually one becomes used to the violence and injury and can focus more dispassionately on the priorities of each individual case. As he depends on which surgical team is on. A good team allows one to concentrate on one's own area of special interest while having confidence that other aspects are being competently managed. Unfortunately this was not always the case. Although the work was physically and emotionally stressful the rewarding number of hours worked in a month did allow time to get away from a job.

During the six months and month was spent as an elective period I spent to work in the hyperbaric medicine unit to update the Director Dr Ray Myers, who is also a full time attending trauma surgeon. He is very enthusiastic about the role of hyperbaric oxygen therapy conditions and is recognised as a world authority in the specialty. I was responsible for receiving new admissions according to the clinical criteria and then following up those patients. I dealt with a wide variety of cases including carbon monoxide poisoning, carbon embolism, decompression sickness, necrotising fasciitis, chronic ulcers and ulcers and phlegm surgery. I was particularly interested in the treatment of patients requiring ventilation and vascular support, in the effects of pressure on the cardiovascular and/or renal system and quite major and can be discussed. I occasionally

comprised the visiting students who were carefully run through, with some of the more suitable patients and supervised the completion of their management.

IMPRESSIONS

In the present-day UK, certainly, there is a lack of capacity to accept trainee cases, especially presenting students, which may impair efficiency in dealing with such cases at any given location. I believe I was fortunate in gaining valuable experience in the management of acute coronary care in the United States' largest trauma centre and also gaining an insight into the American health care system. Their system may be highly expensive, with costs being only partially met by insurance payments which has led to financial crises in many trauma centres. At present the UK does not insure and could not afford such expensive systems. Therefore I believe that opportunities for training in trauma management offered in the USA should be pursued both on attachments and surgery. I believe that post fellowship experience would gain most benefit in terms of improved clinical training and research opportunities.

In comparing the experience of training overseas, as a level 1 trauma centre in the USA, to the field conditions encountered in wartime

and I believe, are obvious. The acute field was a number of levels which can be attributed from the trauma centre and successfully applied to the field hospital. Probably the greatest benefit gained was the confidence in managing severely injured casualties and of maintaining excellent good response in the most unlikely circumstances. I would like to thank all those persons at Shekhar's residence my training for their assistance during often very stressful periods. It was a most valuable experience which I hope others will also be able to benefit from and will eventually become a complete part of training for those directly involved in trauma management in the Royal Army.

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Diagnosis, progression, prognostic indication and classification of periodontal disease: A review (Part 1)

C. R. Priestland

Abstract

This review is divided into six parts. All parts appear in the first, for progression of periodontal disease and the diagnostic problems, as a means for high risk groups of patients will be reviewed. The definitions reviewed are of determining bone resorption activity and historical changes of oral disease will also be considered along with the wide variation in disease progression rates. Disease diagnosis, diagnosis and disease severity factors, as a typical classification of periodontal diseases will be described. In the second part, three periodontal diseases described as diagnosis will be reviewed. Finally in the third part, *Parodontitis* will be reviewed with some diagnosis being placed on the development of the periodontal disease in systemic diseases.

INTRODUCTION

Periodontal disease, although widely distributed in the population, only accounts for a significant amount of tooth loss in a minority of people¹. Periodontal diseases include gingivitis and periodontitis. Diagnosis of the milder form of periodontal disease may be found in nearly all adults. The usual signs of gingivitis include general erythema and general edema leading to an increased gingival volume (depth) (hyperplasia) and bleeding on periodontal probing (Figure 1). As the gingivitis progresses, the inflammatory forces may cause loss of periodontal attachment between the gingival base and the root surface arising from breakdown of the periodontal ligaments and the invasion of a new pocket. At this stage the disease is termed periodontitis. With continued invasion from microorganisms and the consequent reduction

in periodontal ligament area, the teeth may become mobile, begin to migrate due to the reduced forces acting upon it, or the teeth may serve as a path for supporting infection which may lead to the development of a periodontal abscess. The early identification of periodontal diseases will enable patients by ensuring earlier, less complex, less extensive and less costly treatment. For these reasons, early diagnosis of periodontal disease in General Dental Practice is of great importance.

The World Health Organization (WHO) data on the Community Periodontal Index for Treatment Needs (CPITN)² have shown that the CPITN system successfully identifies population groups with gingivitis or evidence of past periodontal destruction, which have been termed the high risk group. Consequently the CPITN full mouth scoring system, now termed the Basic Periodontal Examination (BPE) may be used as a screening tool to identify individuals requiring detailed periodontal examination and treatment prior to commencing their individual treatment needs.³ In the United States of America, APE has been replaced the



Fig. 1.

Surgeon Commander (C.R. Priestland) is Head of the Research and Clinical Advisor in Periodontology, at the Institute of Dental Medicine.

Periodontal Probing and Recording (PPR) has been accepted as a screening examination since June 1982 by the American Dental Association and the American Academy of Periodontology. The APE stresses the examination of all the periodontal spaces but recording only some is stressed. For adolescents only the periodontal spaces of fully erupted permanent teeth need be probed. For older teeth, Periodontal Disease Assessments (PDA) teeth 16, 17, 26, 28, 31, 46 should be examined for recording of abutments, up to the age of 18 years.¹² It should be remembered that the APE stresses scores in adolescents *is* for screening and does not in itself identify individual places that need more.

The CHITN examination may be used to gather epidemiological data by use of the CHITN Periodontal Index, as recommended by the WHO. This uses ten index teeth (FDI teeth 17, 16, 21, 26, 27, 31, 36, 41, 46 and 47) which includes two of the probe (FDI teeth 26 and 46) proposed by Klotzel¹³ as these teeth most likely to be representative for the examination of large numbers of subjects. However, period probing probes have been shown to be substandard and under estimate the prevalence and severity of periodontal diseases.¹⁴⁻¹⁶ The teeth described by Klotzel¹³ for example, have been shown to be excellent representatives of the entire dentition in epidemiological studies of gingivitis but have not proved to represent the entire dentition in the epidemiological investigation of periodontitis.¹⁷⁻¹⁹ It has been shown that the presence of periodontal pockets in one or more of the index teeth is a highly reliable of their presence elsewhere, but that their absence is not diagnostic of their absence elsewhere.²⁰ Thus, the WHO concluded that the prevalence of periodontal involvement in a population would be underestimated if the examinations were based on a period probing index.²¹ It is for this reason that full mouth probing should be carried out as part of the diagnostic procedure in screening for periodontal disease in adults.

Although probing is a widely employed technique the periodontal examination is only of benefit if carried out correctly. The clinician should use a probe of standard design of all subcategory probing examinations of any comparison is to be made between depths. The probe must also be applied in the same way in all examinations. This means that some probe should be applied to the gingival sulcus/

periodontal pocket with the same force, and a 45° angle angulation in all cases. The probe should be applied along the long axis of the tooth to ensure that exaggerated pocket depths are not recorded. Such accuracy of probing is not easy and requires a great deal of instruction. This is an area which should not only apply to research examinations but also routine clinical examinations.

Following a screening examination using APE/PPR, and in the presence of bleeding, an assessment must be made of the severity and extent of periodontal inflammation as only then a diagnosis may be made between inflammation limited to the gingival soft tissues (gingivitis) and inflammation which has progressed to involve the periodontal ligament or the supporting bone (periodontitis). This can only be made by a full mouth periodontal probing examination. If probing is in stages of 1 day it is likely that there has been some loss of periodontal attachment. Careful probing using a standardised probing force and reproducible angulation can give an accurate assessment of the level of attachment. However, where there has been more advanced periodontal destruction radiographic examination will provide further evidence of bone defects. It must be borne in mind that such radiographs provide only a two dimensional representation of a three dimensional structure. For this reason radiography supplements but must not replace detailed periodontal probing examination.

Probing depth provides evidence of past disease activity while gingival bleeding on probing indicates that there is periodontal inflammation within the tissues. At the present time, bleeding on gently probing is better of 25 per cent considered a useful tool in determining current disease activity although even in the presence of inflammation inflammation is not necessarily taking place. Where reliable and sensitive tests are available which may be used quickly and cheaply in the clinic, such as diathermy to measure the various state of health and the need for therapy.

In the presence of bleeding, it is essential that the plaque control is stressed vigorously. However, it must be understood that plaque should be divided into supragingival and subgingival plaque. It is the subgingival plaque which is an obvious concern with the periodontal tissues and thereby inducing inflammation. It is fundamental to successful therapy to understand this division. All plaque induces record supragingival plaque on various ways. So for there

does not appear to be a simple and efficient method for the evaluation and recording of sub gingival plaque accumulation. Super gingival plaque accumulation is only indicative of poor plaque control and therefore an indicator of the likelihood of substantial deposits of sub gingival plaque. Whenever assessing hygiene efficiency it is important firstly to remove the supra gingival plaque and then use a probe, usually first of plaque, along the sub gingival surface of the root and then score the probe for plaque deposits. However the recording of varying severities of sub gingival plaque remains a problem.

DIAGNOSIS

The diagnosis of periodontal disease is often only achieved when there has been destruction of periodontal structures of sufficient severity to cause symptoms and signs of disease. This frequently means that diagnosis is delayed until an advanced state of disease exists. The symptoms of periodontal disease may include a history of bleeding from the gingivae after eating or brushing, or bleeding may have been spontaneous. The signs may include an alteration in form, consistency and colour of the gingival tissues. Increased size may demonstrate inflammation or swelling and may appear erythematous, indurated and as many cases, painful. It may where there is severe disease, be periodontitis. When probing a site of periodontal inflammation, the probe tip may penetrate the periodontal epithelium which leads to bleeding and the recording of an exaggerated pocket depth (Figs 2a and 2b). In some cases suppuration may have been expressed in the past or detected at examination. The clinician should always remember that it is the bleeding on probing which is recorded and not gingival redness, because many patients may or may not be particularly hygienic. ¹⁰ There is now a frequently reported complaint of periodontal disease although there may be a positive correlation between pain on probing and disease activity.¹¹ This is likely to be due to the modification of pain receptor response attributable to the inflammatory mediators present in the inflamed gingival tissue. More advanced disease may be identified by radiographs as severe gingival recession associated with mobility, some suppuration and recurrent disease flares at sites with a probe-penetration including root grooves and as formation of wide radiating cysts. Due to the wide variation in clinical presentation of

periodontal disease, a full and detailed oral history and examination is necessary in order to identify patients and sites where there is loss of attachment of a severity which is likely to challenge the long term retention of cast or metal work.

PROGNOSIS

For many years it was believed that periodontal disease began as gingivitis with irreversible progression to periodontitis. This is no longer accepted. Indeed the only evidence supporting this view was gained from postmortem histological



Figure 2a. Healthy periodontal anatomy with periodontal probe in gingival sulcus. (A) Alveolar bone; (B) Alveolar crest; (C) Attached gingiva; (D) Junctional epithelium; (E) Supragingival plaque; (F) Periodontal space; (G) Root canal probe; (H) Root canal probe.



Figure 2b. Horizontal inflammation with root pyorrhea and necrosis of the alveolar bone. The periodontal pocket has perforated the alveolar septulae. (A) Alveolar bone; (B) Alveolar bone; (C) Alveolar bone; (D) Root; (E) Root; (F) Root; (G) Root; (H) Root; (I) Root; (J) Root; (K) Root; (L) Root; (M) Root; (N) Root; (O) Root; (P) Root; (Q) Root; (R) Root; (S) Root; (T) Root; (U) Root; (V) Root; (W) Root; (X) Root; (Y) Root; (Z) Root; (AA) Root; (AB) Root; (AC) Root; (AD) Root; (AE) Root; (AF) Root; (AG) Root; (AH) Root; (AI) Root; (AJ) Root; (AK) Root; (AL) Root; (AM) Root; (AN) Root; (AO) Root; (AP) Root; (AQ) Root; (AR) Root; (AS) Root; (AT) Root; (AU) Root; (AV) Root; (AW) Root; (AX) Root; (AY) Root; (AZ) Root; (BA) Root; (BB) Root; (BC) Root; (BD) Root; (BE) Root; (BF) Root; (BG) Root; (BH) Root; (BI) Root; (BJ) Root; (BK) Root; (BL) Root; (BM) Root; (BN) Root; (BO) Root; (BP) Root; (BQ) Root; (BR) Root; (BS) Root; (BT) Root; (BU) Root; (BV) Root; (BW) Root; (BX) Root; (BY) Root; (BZ) Root; (CA) Root; (CB) Root; (CC) Root; (CD) Root; (CE) Root; (CF) Root; (CG) Root; (CH) Root; (CI) Root; (CJ) Root; (CK) Root; (CL) Root; (CM) Root; (CN) Root; (CO) Root; (CP) Root; (CQ) Root; (CR) Root; (CS) Root; (CT) Root; (CU) Root; (CV) Root; (CW) Root; (CX) Root; (CY) Root; (CZ) Root; (DA) Root; (DB) Root; (DC) Root; (DD) Root; (DE) Root; (DF) Root; (DG) Root; (DH) Root; (DI) Root; (DJ) Root; (DK) Root; (DL) Root; (DM) Root; (DN) Root; (DO) Root; (DP) Root; (DQ) Root; (DR) Root; (DS) Root; (DT) Root; (DU) Root; (DV) Root; (DW) Root; (DX) Root; (DY) Root; (DZ) Root; (EA) Root; (EB) Root; (EC) Root; (ED) Root; (EE) Root; (EF) Root; (EG) Root; (EH) Root; (EI) Root; (EJ) Root; (EK) Root; (EL) Root; (EM) Root; (EN) Root; (EO) Root; (EP) Root; (EQ) Root; (ER) Root; (ES) Root; (ET) Root; (EU) Root; (EV) Root; (EW) Root; (EX) Root; (EY) Root; (EZ) Root; (FA) Root; (FB) Root; (FC) Root; (FD) Root; (FE) Root; (FG) Root; (FH) Root; (FI) Root; (FJ) Root; (FK) Root; (FL) Root; (FM) Root; (FN) Root; (FO) Root; (FP) Root; (FQ) Root; (FR) Root; (FS) Root; (FT) Root; (FU) Root; (FV) Root; (FW) Root; (FX) Root; (FY) Root; (FZ) Root; (GA) Root; 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dent¹⁴ and the findings of studies carried out in animal models.^{15,16} Epidemiologists, who investigate disease patterns, doubly-using words as data gathered from large samples of populations and hence make their conclusions from past data which has the potential to mask actual disease progression and outcome in individuals generally at the site level. More recent work indicates that there is numerous variation in rates of periodontal disease progression between people, and between sites within the same patient.¹⁷ Progression must be

dependent upon a number of different factors including the virulence of the microflora present, the host's cell-mediated and humoral immunological response, mechanical and hormonal status, certain drug therapy, and local factors which may include assessment and restorative forms. The periodontal lesion, which is self-generating, remained and has no evidence of any loss of this lesion is irreversible and by the potential to remain stable or to progress to severe stages, means having no distinction of the periodontal situation.

Chilgren has been shown to be of great importance in the serology of gingivitis progression to periodontitis and continued loss of periodontal attachment,¹⁸ but there are other factors of importance which determine individual susceptibility. There are individuals, aged over 60 years who have had gingivitis plaques throughout life and yet have not developed periodontal destruction.¹⁹ Therefore, progression from gingivitis, where inflammation is confined to the gingival papillary tissue, to periodontitis, where the disease has progressed to involve loss of connective tissue structure between the root surface and the alveolar bone, is not inevitable. Work by Lindstrom et al²⁰ indicates that following repeated examination over two years, the repeated presence of bleeding on probing may be evidence of heavy disease progression in approximately 30% of sites. Conversely, 70% of lesions which repeatedly failed on probing failed to progress. However, the absence of bleeding on probing is a specific indicator of health (no periodontal destruction). Page and Schroeder²¹ discussed the histopathology of various stages in the development of the periodontal lesion. The progression from gingivitis to continued inflammation, to involve some of the underlying periodontal tissues is associated with a change from an inflammatory lesion dominated by T lymphocytes, to a lesion where plasma cells predominate.²²

The Proceedings of the World Workshop in Clinical Periodontics, 1985²³ held in Princeton, USA, indicate that many periodontal diseases are specific, the duration and frequency of which are unknown. They further stated that the periodontist is only capable of controlling the progression of disease has occurred previously rather than decreasing the present state of disease activity. Perhaps it should also have been said that the progression is currently susceptible of producing future disease activity. The 'Gold' standard for decreasing disease activity can only be by histological examination.

of time as an acceptable diagnostic technique in general dental practice. Presently the only method for the assessment of disease activity available to clinicians is retrospective and consists of the serial recording of clinical parameters including pocket depth, and attachment levels over a number of consecutive appointments.

The extension to periodontal disease progression rate has already been mentioned. Mean rates of progress calculated from large numbers of subjects in epidemiological studies indicate that the loss of attachment is steadily or regularly the domain of the majority of the population. However such group data obscure the rate of loss of attachment at individual sites where a break may be the first clue to the aggressive and late specification of the disease process at a high and individual. Within a single month it is found to find different rates of loss of attachment for different teeth and indeed on different aspects of the same tooth. This may specifically directed by anatomy or it cannot be proved but is suggested for by local aetiological, microbiological or haemodynamic factors. However progress rates local amongst investigators can be employed as the enhanced severity of periodontal breakdown by making plaque scored sites different. Such factors include the presence of pathogenic protozoa, bacteria etc. of much noted local aetiological progression, enamel pearls, root surface irregularities, over hanging restorations (fillings, crowns and veneers) and tooth malalignment.¹

DISEASE ACTIVITY MARKERS AND PROGNOSTIC INDICATORS

The development of tests which can be carried out to indicate future periodontal disease activity on a site or individual tooth is the subject of research in many centres throughout the world. Microbiological markers have been investigated widely but the various periodontal diseases have different associated flora hence there is considerable difficulty in identifying the most useful, reproducible on which to base tests. A limited problem reconsidered in the development of microbiological tests for the classification of periodontal disease groups is the relevance to the organisms present at sites sites. *Actinobacillus actinans* *Prevotella intermedia*, *Porphyromonas gingivalis*, *Parvotella intermedia*, *Campylobacter* *morax*, *Flavobacterium* *moraxellus* and many other organisms although identified at many sites are not often found at sites judged to be inactive

and stable. Such tests are available commercially but so far they do not have a proven track record for disease activity prediction. Results of such tests only indicate the presence or absence of a particular organism associated with disease activity at the time of testing.

Several methods have been employed to identify the bacteria associated with sites of periodontal disease activity. These methods include the detection of specific antigenic character using a DNA probe for specific sequences of coding code,² microbial systems including *Typhoid*³ and immunological systems involving latex agglutination, flow cytometry, enzyme linked immunosorbent assay (ELISA) and immunofluorescent microscopy.⁴

Advantage tests of research involve less invasive probes in gingival crevicular fluid as possible indicators of current tissue breakdown or future disease progression. These include collagenase,^{5,6,7} beta glucuronidase,^{8,9} hyaluronase,¹⁰ aspartate aminotransferase¹¹ and release of prostaglandin.¹² There is wide variation in the activity of one species, future disease progression between different disease workers tested so that is determined by sensitivity and specificity. Levels of the Prostaglandin H₂ (PGH₂) have also been investigated as a possible indicator of disease with PGH₂ levels five times higher at sites undergoing loss of attachment when compared to control sites. The levels returned to normal within one month of successful therapy at the sites.¹³

Radiological findings on testing the movement of bone height and dimensions using analysis using roentgenographic film and computer aided systems may also become common diagnostic tests in future general dental practice.

PERIODONTAL DISEASE CLASSIFICATION

Periodontal disease has been sub grouped into a number of different diseases, the classification of which has not yet received universal acceptance. However the classification proposed by the 1984 World Workshop¹⁴ is probably the most widely accepted. This recommended classification is given below.

Gingivitis

Plaque associated

Acute Necrotizing Ulcerative

Generalized aggressive ulcerative

Medication induced

Disseminated

Periodontitis

- 1 Adult onset
- 2 Early Onset Periodontitis
 - A Periodontal Periodontitis
 - 1 Generalized
 - 2 Localized
 - B Juvenile Periodontitis
 - 1 Generalized
 - 2 Localized
- C Rapidly Progressive Periodontitis (Type A/Typh)
- 3 Periodontitis associated with Systemic Disease
- 4 Necrotizing Ulcerative Periodontitis
- 5 Refractory Periodontitis

Periodontal disease encompasses a number of different disease entities, all with unique characteristics in terms of onset, site and age distribution, aetiological factors underlying clinical features and pathological events, including both bacterial and cellular derangements from normal. In the text of this series of three papers each specific disease entity within the above classification will be outlined to highlight the important features for diagnosis and classification purposes. Lastly, treatment for all periodontal diseases aims to control the bacterial plaque which is the primary aetiological factor in all cases. Inability to maintain a high standard of plaque control particularly with gingivitis may lead to failure to resolve the periodontal inflammation with the result that disease progression may continue unabated.

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Passive smoking in the Royal Navy

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Abstract

Passive smoking is an airborne irritant and may weigh in favour of considerable morbidity in the past few years. These facts, the available statistics and the results of the experiments for and against both active and passive smoking, and discussion, is critically examined using statistics of the Royal Navy as smoking material.

There was an attempt to prove that passive smoking is a cause of lung cancer, but also the results of the matter is explained by the ship's company of a Type 22 frigate. These results will be compared to the statistics of a similar service carried out among civilian populations. Finally, reasons for evidence and possible practical strategies for solving the problem will be discussed.

INTRODUCTION

The last few years have seen the publication of a large body of evidence that passive smoking is a health hazard rather than merely a nuisance. Many scientific bodies, in Britain (Aspinall¹) and the United States^{2,3} have examined the evidence and concluded that environmental tobacco smoke (ETS) is indeed damaging to health.

There is little doubt that tobacco smoke has the potential to cause harm. It is made up of thousands of chemicals which are released into the air as particles and gases. These include 40 known or suspected carcinogenic chemicals.⁴ ETS is divided into mainstream and sidestream smoke. Mainstream smoke is the smoke exhaled by the smoker after having first been filtered by the lungs, and sidestream smoke is that released from the burning tip of the cigarette.

Sidestream smoke is chemically different to and more than mainstream smoke, due to the incomplete combustion that results from the lower temperatures of cigarette tip combustion. Measurements, both direct and indirect, have shown that sidestream smoke is all more abundant in nicotine than in mainstream smoke.⁵ These findings have persuaded the UK Environmental Protection Agency to classify sidestream smoke as a class A (greater toxicity) very hazardous carcinogen.⁶ The dangers of passive smoking are therefore enough although not since the evidence of a causal link is more compelling than before.

Lung Cancer

Lung cancer kills more than 40 000 people in the United Kingdom each year, of which about 90% are smokers. In 1981 the first large study linking ETS with lung cancer was published.⁷ Since then, five major expert reports have been published,⁸⁻¹² all concluding that passive smoking causes lung cancer in non-smokers. The Progress Committee¹³ estimated that non-smokers exposed to ETS have a 30-50% increased risk of lung cancer and that would translate to several hundred deaths per year in the UK.

Other cancers

Relatively little has been published on cancers other than lung cancer, but a link has been established by various cancers. Cancer of the cervix has been linked to both mainstream and sidestream smoke,^{14,15} while oesophageal cancer also is increasing for an increased relative risk of developing breast and prostate cancer.¹⁶

Surgeon Lieutenant Cancer is currently serving in HMS Gelson.

Heart disease

A positive link between passive smoking and ischaemic heart disease has been established by various studies including ongoing doctors. Most analyses of these studies have been performed by two groups^{1,2} both concluding that such a link independently exists and that the greatest increase is of the order of 15 to 20% for non-smokers living with smokers.

The mechanism by which ETS causes artery disease has been derived from human studies and is thought to have effects both short term and long term. The short term effects are mediated through the increase in levels of erythrocyte haemoglobin (COHb) which increases platelet aggregation and/or adhesion thereby rendering them to adhere more readily to atherosclerotic plaques. COHb and later chemistry in atherosclerosis made during the arterial endothelium contributing to further atherosclerosis. Another long term effect of ETS is that it may lower levels of high density lipoprotein and increase triglyceride^{3,4} again leading to increased atherosclerosis.

Childhood diseases

A number of childhood ailments are believed to be either caused or exacerbated by passive smoking. Passive smoking has been shown to increase febrile-like frequency and severity of acute diseases such as bronchitis, pneumonia and other lower respiratory diseases.⁵⁻⁷ There is no clear cut.

Acute effects of ETS exposure

The impact on ETS affect the cardiovascular, bronchial, ocular and increased hyperpnea and the mucous membranes of the nose, throat and lower respiratory tract contributing cough and chest pain.⁸

Recent research suggests that ETS exacerbates cold/flu-like syndrome⁹ a combination of watery eyes, stuffy nose and dry throat. These symptoms are continuous compared to those that live and work on weekdays and on weekends including night.

METHOD

To establish the level of overexposure and linkage on passive smoking, the whole day's exposure of a Type 12 logistic (1994) Cumberland was given a questionnaire of stress exposure to which the response was either yes or no. The survey was anonymous. The

question was based on a similar study carried out in public sector workplaces as part of a National Opioid Poll.

RESULTS

Table 1 depicts the results of the questionnaire with a response rate of 73.8%.

Table 2 compares these results and those possible from a non-dependent position that they overall smokers who believed that passive smoking was not harmful. This non-dependent view was created in love and work as a smoke free environment and that smoking should not be banned from commercial areas.

Table 3 compares elements of Table 1 and 2 with results from a 1987 National Opioid Poll on passive smoking in the workplace.

DISCUSSION

The first point of note in Table 1 is the proportion of non-smokers seeing a group increasingly classified as 'passive smokers'. This change is probably a consequence of the general anti-smoking movement in society and aided by the dissemination of Sirs Linton. Evidence also plays a role highlighted by the fact that only 14% were unaware of the dangers of passive smoking.

Table 2 was formulated for the benefit of those who would question why 37.8% failed to respond. The more that smokers were assumed in which all non-dependent defined factors, of strong opposition to the implementation of the survey. Even from their opinion it can be seen that smokers are in the majority (47.9%) that a quarter of all smokers (25.4%) considered the risk of non-smokers to live and work in a smoke free environment and that half (49.1%) at the day's workplace felt that smoking should be banned from commercial areas. In reality the more likely reason for non response was likely across the whole spectrum of views thus minimizing the impact in Table 1.

The comparison between the day's survey results and those of the National Opioid Poll depicted in Table 3 reveals a large difference between the rates of smokers and non-smokers and probably indicates how much closer both survey operators on the subject.

While it has shown how best adapted today's work/life for the reasons of health and perhaps most critically for fear of litigation. Since and a few years ahead and in the UK have prompted many employers to take action. The legal issue on smoking passive smoking have

Table 1. Results of questionnaire

Response	Number	Percentage
Ship's company	240	
Non-smokers	203	73.1
Men	170	67.1
Female	28	13.8
Smokers	55	27.7
Non-smokers	148	73.3
Ex-smokers	21	16.5
Those who thought that passive smoking was not harmful	17	8.4
Non-smokers who felt that they should have the right to rest and work in a smoke free environment	138	84.2
Smokers who agreed with the above	34	60.7
Those who felt that smoking should be banned from communal areas	126	66.6
Smokers who agreed with the above	15	26.8

Table 2. Results of questionnaire including possible views of non-respondents

Response	Number	Percentage
Ship's company	240	
Non-respondents	240	100
Smokers	134	47.8
Non-smokers	148	62.1
Those who thought that passive smoking was not harmful	35	23.8
Non-smokers who felt that they should have the right to rest and work in a smoke free environment	129	86.2
Smokers who agreed with the above	34	79.4
Those who felt that smoking should be banned from communal areas	126	48.2
Smokers who agreed with the above	15	15.2

Table 3. Comparison between questionnaire and a Rational Opinion Poll

Response	Table 1 (%)	Table 2 (%)	χ^2 DF
Non-smokers who felt that they had a right to live and work in a smoke free environment	84.2	86.2	80
Smokers who agreed with above	60.7	79.4	31

than recently noticed" and were that employers have a common law duty to secure employees of health hazards and a statutory duty to take action to safeguard their health. Employers are protected under criminal law by virtue of Health and Safety at Work Act 1974 and under civil law which allows employees whose health is harmed to sue the employer for their personal injuries.

The type of case that would be successful in the setting of the Royal Navy would be one where a businessman told shop staff to serve on duty, overrode an on-call or evening, a type of duty roster which prohibited, taking involvement with cigarette smoking. It could be argued that the case was due to a long term occupational exposure to PTS, had such a case as a civilian setting has been fought and won¹ — but not in the UK — yet.

The provision of smoke free zones in shops and businesses is, relatively simple with the majority of buildings relying on natural ventilation. The problem lies with shops that possess sealed air conditioning systems which recirculate 80-90% of the air. Even having smoking designated compartments would not resolve the problem. The smoke (fume) incorporated into standards are only capable of limiting a proportion of the CO₂ of tobacco smoke, therefore, particularly the smoking 90% circulating the room (area). The WHO has issued guidelines on smoking in the workplace but with no reference to smoking.

Other issues have concerned greater exposure in smoking. The US Congress follow a policy on these shops, which permit smoking only on non-designated, and the WHO further a ban a ban on smoking even in these areas.

CONCLUSION

In the modern era of increased public awareness of health issues and the ever present risk of liability lawsuits the issue of passive smoking is one which cannot be ignored. To prevent the government has no legislation on smoking in the workplace and is content to let employers to formulate their own policies.

The issue has generated the available evidence which most does suggest that passive smoking is physically harmful. The issue of a shop a company or passive smoking have been exposed revealing that the majority are opposed to being secondarily exposed to PTS and would like shops implemented to reduce the if these

shops are indicative of the findings of the rest of the fleet, then it is imperative that the Royal Navy establish definitive policies. It should not matter as even without before the distress is forced upon it.

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Table 1

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Changes in selected parameters of health and physical fitness following a sixteen-week deployment at sea

P W King-Lewis and A J Allsopp

Abstract

The effects of 16 weeks at sea upon selected parameters of health and physical fitness were investigated in 30 male volunteers from a naval crew of 40 men prior to and immediately following deployment.

The 30 subjects were assigned to either an active or group Bx (n=15) as a non-exercising group. Values (n=15) according to their reported participation in vigorous training or sports.

Body mass index (BMI), cardiovascular fitness and weight remained the same in deployment 17 of the 30 subjects (five in the Bx group) had a BMI over 27.4 kg m⁻², overweight, and a fitness state category (all non-exercising) had values of 27.4 kg m⁻² or more, whereas in addition the female, blood pressure of five subjects was at levels of 130 mmHg and five subjects had resting heart rates above 100 beats per minute. Subsequent comparisons between the Bx and 16-week groups revealed a significantly lower percentage body fat (P<0.05) and a higher rate of carbohydrate use (P<0.004) following a 60-min bout of exercise, in the Bx group, others that these individuals were significantly younger (mean age of 24 years) than those in the 16-week group (32 years).

Following deployment in the 16-week group, components of pre- and post-values showed that resting heart rate was elevated (P<0.05) or lower than pre-deployment in the 16-week group (one male while performing the standard exercise test was also elevated (P<0.05) on the second test occasion, in the 16-week group, two males, during and following exercise, submaximal oxygen only showed rate of oxygen uptake (l min⁻¹) on the second test occasion.

It is concluded that, firstly, these volunteering recruits suggest a good level of physical fitness during tests, members of the crew or other exposed sea to sub-optimal physical fitness, secondly, changes in cardiac responses to exercise consistent with a reduction in cardiovascular fitness were observed following the 16-week deployment.

INTRODUCTION

The maintenance of the health and physical fitness of personnel is of primary importance to the success of any sea to be capable of physical effort on the crews of any ship. However, while sport and exercise may be encouraged systems for the provision of hardware and computers, there is limited capacity for them to be maintained in use. Rather, they should be maintained out of a continuous exercise and activity may be encouraged by lifestyle on the ship.

The health of personnel is viewed at intervals of one year by medical examinations (FELDERMAN). Physical fitness is linked to stress and prior to working subsequent studies by a latent disease can be identified, stress and anxiety have an impact on the way which responds the cardiac response to submaximal exercise.¹ However, for the majority of personnel there is no routine assessment of physical fitness. One previous study reported a 37% decrease in physical fitness following a six week sailing expedition, but the disease outcome was not confirmed in a later study which found no significant change.

The aim of the present study was to examine the level of fitness of volunteers from a crew on board a maritime battery and immediately following a 16-week deployment.

Surgeon Lieutenant Commander King-Lewis has been on the Royal Navy on the Shipboard Log, the Allsopp is a physiologist at the Institute of Naval Medicine, Gosport, Hampshire.

METHODS

The experimental protocol was approved by a local ethical committee prior to subject recruitment.

Subjects. Thirty healthy (but not necessarily fit) male volunteers aged between 20 and 40 years asked to participate from a total pool of 40 men on board a RN warship. Participants were fully informed about the nature of the trial and gave their written consent to participate in accordance with the Helsinki Declaration (1976). Subjects aged over 35 years were recruited by the project Medical Officer prior to participation. Subjects were assigned to either an exercising (Ex) or non-exercising (NEx) category according to their reported participation in physical exercise of sport, a maximum deviation of 4 h or less would modify the two groups prior to deployment and would be assigned to Ex subjects.

Protocol. All tests were conducted aboard ship, the day is approximately the same time of day as both experimental (active) pre- and post-deployment. Tests were administered in order, and in ascending order of altitude or altitude stress for a light run test, before testing. While compliance with these instructions was assumed, subjects were asked in the morning when all crew were mostly employed and were unlikely to have drunk alcohol since the previous evening. During the nine-week test month period of the trial the day was deployed to the open sea and waters and the crew were permitted time ashore as required.

Experimental Measures. Height, weight and standard deviation were measured and percentage body fat (%) determined by standard regression equations.¹ Body mass index (BMI)² was also calculated from weight/height and expressed in kg m⁻². Each subject gave lay down and a blood for a period of five minutes during which blood pressure was measured three times using an automatic monitor (Dinamap, Applied Medical Research, USA). The third reading was accepted as the true, resting value as the subject was more familiar with the cuff inflation and sound of the compressor by the time the third reading occurred. Mean arterial pressure (MAP) was calculated to double the pressure, plus one third of the pulse pressure.³ For the catheter, only non-specific subjects <300 was measured (B&W Deacon, UK) while they remained seated for two or three minutes. The subject then stepped on to a 40-cm box at a rate of 30 complete steps per minute at least to a

metronome for a period of one minute. The subject then stepped and rested for up to 10 minutes. Heart rate was recorded as follows: 10 min prior to commencement of exercise ($\dot{V}M_{10}$), maximum heart rate during work ($\dot{V}M_{max}$), maximum heart rate one minute after cessation of exercise ($\dot{V}M_{10}$) and 10 min during intervals thereafter until final heart rate recovered to within 5 bpm of $\dot{V}M_{10}$ or for up to 10 minutes. The percentage reduction in heart rate (%DRR) during the first 10 seconds of recovery was calculated. This data first used a similar methodology to the RN Diver's Key Test.

Statistical analysis. The method of paired *t* tests was used to assess longitudinal changes within the same group of subjects whereas differences between groups were examined using the unpaired *t* test, of the Kolmogorov-Smirnov test parameters, but in the case of % fat.

RESULTS

The results presented below refer to the whole group of subjects (see table 1) as to various Ex ($n=12$) subjects and non-exercising (NEx; $n=18$) subjects groups. The distribution of values in the standard deviation of measurements, and use in the standard error of the difference of two means.

The anthropometric, heart rate and blood pressure measures of the group prior to deployment.

The average age of the Ex group was 34.1 (sd 3.21) years, significantly ($P<0.001$) younger than the NEx group (36.1 (sd 6.6) years).

The ranges of height and weight of the whole group were 1.60–1.92 m and 67–100.0 kg, respectively. The maximums were higher ($P<0.001$) in height, weighing 76.5 (sd 4.6) kg compared to 27.5 (sd 7.6) kg for the NEx group, and 84.5 (sd 11.2) kg for Ex and 41.5 kg compared to the NEx group (23.4 (sd 1.9) (sd 1.4) (sd 1.4) kg. The height of the two groups was similar (1.78 (sd 0.11) m and 1.76 (sd 0.08) m for Ex and NEx, respectively) resulting in BMI values of 24 kg m⁻² and 22 kg m⁻² for Ex and NEx, respectively ($P<0.001$). For the 30 subjects, overall this gave an average BMI value of 26 kg m⁻² (range 21.5–32.5 kg m⁻²) with a total of 15 subjects greater than 24 kg m⁻² (Figure 1).

Resting heart rate of the group ranged from 55–99 beats per minute (Figure 2). Despite lower $\dot{V}M_{10}$ and $\dot{V}M_{max}$ values in the exercising group compared to NEx, these differences

Table 1 Summary Statistics Prior to Deployment

	Allies		Fils Group		Fils Group		Fils Group		P value
	Mean	sd	mean	max	Mean	sd	max	max	
Age (years)	24.3	3.3	27	32	30.4	4.3	22	48	<0.01
Height (cm)	176	6.1	184	190	178	6.5	190	192	NS
Weight (kg)	70.6	8.8	84.2	100	83.3	7.8	88.5	97.2	<0.05
% fat (%)	17.2	4.1	8.3	25.0	20.4	3.8	14.7	30.9	<0.01
SBP (kg/cm ²)	24.1	1.8	22.1	25.6	22.5	2.8	21.6	32.8	<0.01
Mean arterial									
BP (mmHg)	22	8	22	128	28	11	82	128	NS
Diastolic (mmHg)	20	14	59	97	28	11	60	90	NS
Diastolic (mmHg)	185	18	128	185	182	18	180	188	NS
Diastolic (mmHg)	190	27	48	192	122	18	190	191	<0.05
Diastolic (mmHg)	22	11	15	32	23	8	8	42	<0.05

Footnote: The P value indicates the significance level of the difference between the mean values for the filis and allies groups. NS implies P > 0.05.

were not significant (Table 1). However the allies group demonstrated a higher (P < 0.05) rate of reduction in heart rate (%HR) during recovery (Table 2).

Diastolic blood pressure ranged from 60-92 mmHg, with two subjects having diastolic pressures over 90 mmHg. MAP from 42-125 mmHg (Figure 3). MAP was higher for Filis (99 mmHg) vs 81 mmHg, comparison (P < 0.01) mmHg) but this difference was not significant.

The reported incidence of smoking for the two groups ranged from zero to 300 cigarettes per

week, while weekly alcohol intake was reported as being less than 12 units. Thirteen subjects indicated intake higher than 21 units per week.

It is well known that under-reporting of alcohol intake is commonly observed in surveys of this nature, and the actual intake could therefore have been higher than reported. While one might expect that the allies group might be healthier with respect to smoking and alcohol intake, no differences between the groups were noted.

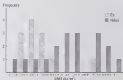


Figure 1 Frequency of Body Mass Index

Table 2. Longitudinal Values Prior to and Following the Russian Work Deployment

	Pre	Ex Group Post	and P value	Pre	Nilex Group Post	and P value
Weight (kg)	78.6	78.2	0.85	80	82.4	0.03
% fat (%)	17.2	18.4	0.44	17.4	18.3	0.88
MMAP (mmHg)	85	88	0.3	85	88	1.0
\dot{M}_{O_2} (l/min)	70	71	2.6	70	84	<0.01
$\dot{M}_{V_{O_2}}$ (l/min)	156	157	2.0	153	172	<0.05
$\dot{M}_{V_{O_2}}$ (l/min)	108	118	2.8	127	137	<0.05
Heart rate	52	57	1.9	53	59	NS

Footnote: and is the standard error of the difference of the pre and post mean values. The P value is the significance level of the difference between pre and post mean values. NS implies $P > 0.05$.

Comparison of pre and post deployment values, longitudinal changes.

Numerically, there was a reduction in body weight loss as measured in % fat in both groups. From the statistical analysis, the only significant change ($P < 0.05$) was the increase in % fat for the Ex group (Figure 2). MMAP did not alter significantly during the course of the deployment in either group. While there was no significant change in \dot{M}_{O_2} for the Ex group, there was an average increase ($P < 0.05$) of 14 l/min for Nilex (Figure 3). Similarly, there was no significant change in $\dot{M}_{V_{O_2}}$ of the Ex group but a 9 l/min increase ($P < 0.05$) for the Nilex group (Figure 3). The heart rate at 80 seconds post exercise was

higher for both the Ex ($P < 0.01$) and Nilex ($P < 0.05$) groups in the second test exercise session. This yielded a significantly slower ($P < 0.05$) reduction in heart rate (-13.6%) during recovery for the Ex group (Figure 4). The cardiovascular, heart rate and blood pressure measures of the group post deployment.

Following deployment, the difference in average body weight between the two groups was found not to be significant ($P = 0.85$). However, the average values of MMAP and \dot{M}_{O_2} of the Nilex group were significantly higher than those for the Ex group (Table 2). Similarly, the higher $\dot{M}_{V_{O_2}}$ of the Nilex group was also significant. Statistically

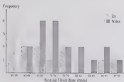


Figure 3. Histogram of Resting Heart Rate

Table 2. Summary Statistics Post Deployment

	IX Group				Miles Group				P value
	Mean	sd	max	min	Mean	sd	max	min	
Weight (kg)	78.2	6.9	94.8	60.8	82.1	8.1	95.0	59.8	NS
% Fat (%)	22.4	3.8	30.2	24.1	24.2	4.4	31.8	20.6	<0.01
BMF (kg m ⁻³)	24.9	1.2	32.3	22.8	28.8	3.0	36.0	22.1	<0.05
MANF (cm ² /kg)	80	4	92	68	98	10	124	52	<0.01
FM ₄ (kg/m)	21	1.6	24	18	24	1.8	30	16.7	<0.05
FM ₁₀ (kg/m)	127	16	157	104	172	17	190	108	<0.01
FM ₄ (kg/m)	118	23	143	77	132	17	153	100	<0.01
%FM (%)	27	5	37	24	32	4	38	23	<0.05

Footnote: The P value indicates the significance level of the difference between the mean values for the IX and Miles groups. NS implies $P > 0.05$.

comparison of all the other variables measured yielded similar results to those pre-deployment.

DISCUSSION

This study was designed to measure changes in health and physical fitness consequent to a period of deployment at sea. Numerous levels of the pre-deployment variables, far worse of poor. Measures of height and weight indicated that 13 of the 30 subjects were overweight and three subjects were above the clinical standards (BMI values in excess of 35 and 30 kg m⁻² respectively). Moreover, % fat indicated provided confirmation that this apparent overweight was attributable to excess adipose

tissue rather than increased muscle mass. These body measures, together with two diastolic pressure over 100 mmHg and five subjects with resting heart rates above 100 beats per minute, are suggestive of a poor level of physical fitness on a number of cross measures.

Statistical differences between the IX and Miles groups were apparent with respect to % fat, MANF, FM₄ and FM₁₀. Generally these would indicate that the clinical relevance of the IX group was superior to the Miles group, which is unsurprising. On board, the participation of some regular members, some classroom divers (especially in regular physical activity) was limited to activities such as skipping or weight training on the diving deck. Furthermore, only eight of

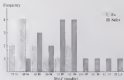
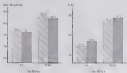


Figure 1. Histogram of Mean Aerial Posture



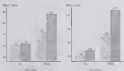
Parameter is means (Pre and Post) and error bars

Figure 2. Body Weight and % Body Fat — Average Values Pre and Post

the subjects indicated that they had participated in any form of exercise either during the deployment.

The sea deployment affected the cardiac responses during rest and exercise of the two groups in different ways: the Males group demonstrated significant increases in $\dot{V}O_{2max}$ and $\dot{V}O_{2rest}$ (11% and 3% respectively) whereas only slight increases were noted in the Fe group. Prior to deployment the Males group increased from the exercise tolerance test mean closely compared to the Fe group (1.44 values of 23% and 31% respectively). Following deployment both groups

demonstrated a worsening in their exercise test, and this was significant in the Fe group (Table 2). Thus, it is suggested that the increase of regular physical activity had the most favorable effect on heart in the highest levels of fitness. These cardiac responses to sea and following exercise are consistent with those which could following periods of reduced physical activity in demanding situations. Moreover, the altered cardiac response above cannot be attributed directly to a reduction or lack of regular physical training as the usual investigation the operating constraints of the trial on 30 men did not



Parameter is means (Pre and Post) and error bars

Figure 3. Spring and Measurement Heart Rate — Average Values Pre and Post

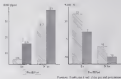


Figure 5. %HR and %B During Recovery — Average Values Pre and Post

partial control of when patients continuing factors such as age, diet and work tasks (dirty) and how drivers for example).

The physical exercise recovery rate of the Ex group following deployment was lower than that reported by Edgren et al. (21%) but this might not be a different method of calculation based upon recovery time and there are even points' limitations in distance on board a submarine. In this study an accurate time for recovery of heart rate to pre-exercise levels was difficult to assess, particularly in those low fit subjects where heart rate remained elevated even after 40 minutes of recovery. In other subjects the heart rate fell quickly to the pre-exercise level and then increased slightly. The reasons for this are unclear, but the exercise test was conducted in a comfortable room temperature (approximately 20°C) and so it is unlikely to relate to increased demands for cooling output arising to increased cardiovascular blood flow. For this reason the %HR value was used as a more reliable indicator of recovery rate.

Our results are also in contrast with the work of North Jones and Smith¹ which did not demonstrate any change in physical fitness as defined by the current BS (Modified Harvard) stepped test. Small groups ($n < 20$) further divided into four sub-groups based upon exercise participation prior to and following deployment.

The significant increase in %HR of the Ex group should be interpreted with caution given that the reproducibility of similar measures on the same subjects indicated a 17% variation in the

recovery of percentage body fat.

CONCLUSIONS

In this examination of 50 crew members it was found that 15 of these were exposed to discomfort in a body mass index increase of 25 kg m⁻³. A number of resting heart rate and heart rate reserve blood pressures exceeded 100 beats per minute and 180 mmHg respectively. Thus, almost all the group could be considered as unfit according to these criteria. In some cases members who reported increasing frequency (Ex group) were considered to be fitter than their non-exercising colleagues (Nils group) as demonstrated by their lower heart rate recovery response to a standardized exercise test and their lower percentage body fat. However, superiority in these measures cannot be awarded to exercise alone as the Ex group were, potentially younger than the Nils group. Measures of heart rate while resting and during a sub-maximal work test, with significantly increased in the Nils group following deployment. In the Ex group %HR was elevated indicating %HR indicating a significantly reduced cardiac recovery rate. But the exercise tolerance of this group remained consistently higher than the Nils group.

ACKNOWLEDGMENTS

The authors wish to thank the Commanding Officer of HMS HULFORTH and those crew who participated in this trial. Thanks are also

due to Dr R. J. Pollock who advised on the statistical analysis, and the final copy of this report sent to P. M. A. A. Wilson who assisted in the reading of the final

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Elective Report: Hong Kong 6 August — 2 October 1993

Lesley M Sowden

As a Medical Officer in the Royal Navy, I chose to undertake my final year elective in a Service establishment and this lucky enough to be approved as HMS Tamar, Hong Kong, from 6 August until 2 October 1993.

I was, situated in the Island Group Practice based on Hong Kong Island, which serves a population of approximately 1000 Service personnel and 1000 civilian dependents including locally recruited Chinese and also Ghetto personnel. Our secondary medical centre was at the time the British Military Hospital (BMH) in Kowloon, run by the Royal Army Medical Corps, although there were also arrangements with several local Chinese specialists to cover any shortfalls in expertise.

My arrival at the Practice coincided naturally with several members of staff taking annual leave and thus left with preparations for an inspection by the Joint Committee on the Post Graduate Training of General Practitioners (JC/PGLP). Consequently, my principal role of particular note in an extra pair of hands in both medical and administrative roles at that busy time.

The role of the Royal Navy in Hong Kong is to help maintain the integrity of territorial waters and this is manifest in the apprehension and return of illegal immigrants and smuggling parties and the deterrence of incursions by People's Republic of China military vessels. In addition, the Royal Navy maintains a 24 hour a day, 365 day a year search and rescue (SAR) capability which offer the only internationally

agreeded hyperbaric facilities for the treatment of decompression illness and other related conditions in South East Asia.

The Island Group Practice is staffed by three doctors, three medical practitioners and two trained, a nursing officer, a Chinese nursing nurse, two UK medical students and 10 locally recruited Chinese, MAs. The function of the Practice are many-fold: providing full medical cover for the registered population and also supporting the Royal Navy activities as a whole, particularly in providing services for the SAR work and diving accidents. As a member whilst staff I was not expected to take part in the duty roster per se, but was on call for SAR, diving emergencies and for epidemic preparations and cover — my most coinciding with the onset of the typhoid season.

Each morning my first job was to look after the sick parade, which is the opportunity for servicemen to report sick at the beginning of the day, in order to be seen by the duty doctor. Usually this would be a MA, but for the period of my elective it became my responsibility to run the daily clinic, with supervised prescribing duties and another medical officer on hand for advice as necessary. As service personnel, these patients were mainly fit young men and consequently their complaints were generally of a minor nature. Commonly there were chaps and colds, mild gastroenteritis, very occasional sexually transmitted diseases and a few cases of sports injuries/over-exercising of muscles. In addition though I encountered a case of malaria, several cases of hepatitis A and B, shingles and a case of latent pneumococci. In particular, the intensive and chronic prophylaxis to tropical infections and special high rate of minor malaria, probably related to the process of maintaining literacy. As an independent medical

Reported with permission Sowden in a medical student in Manchester University.

collier, my consultations were restricted to serious personnel only. I was permitted to see patients with one of the other doctors but not alone. I did however manage to participate fully in the running of patients, diabetes, hypertension and asthmatic clinics. One of the important roles of the Praetor was to be closely involved in the activities of the limited accompanying service personnel in Hong Kong, many of whom were young, and led on constant struggle with the adaptation to an alien culture as the first term.

In addition to my duties at the Praetor I also participated in the first casualty clinic, at the medical centre on Secretary Island, the use of the new H448 Tamar Naval Base and home to a small number of army facilities. The Secretariat, which is staffed by army medical officers for medical cover is provided by the RM. Toured to Secretariat, mainly also included a visit to the three ships of the Hong Kong Squadron in separate medical support and provide back up to the ships, companies. The Praetor also passed staff each term a complement of 44 officers and ratings including a Royal Marine detachment. During some periods which involve a week at sea with one ship for fuel and water there are no medical personnel embarked the medical duties falling to the Lieutenant who is first aid trained. Qualified medical are only embarked in the event of a SAR, a deployment exercise or in obvious preparation in case of emergency. The medical centre faced a fairly quiet first SAR, similar to a peace perimeter, right up to two doctors depending on the weather. I was fortunate to be recruited for two SAR missions as well as doing some sea time for the experience and bridge watchkeeping experience. The first SAR was a training to pick up a Chinese helicopter with a head injury, 300 miles south west of Hong Kong. The helicopter had been reported gone down by a wingman from the land but was located on the dock for 30 hours, by the time we arrived on the scene. He was recuperated on board as he vomited back and forth from off by RAF Wharfedale since we were within helicopter range of Hong Kong.

That second SAR was a training to pick up the four men crew of a RAF Wharfedale which had crashed in the South China Sea on route to the rescue of a fishing vessel stranded in a severe tropical storm. It was to develop two objectives. Primarily, the crew was actually picked up by a British helicopter before we arrived on the scene and medical assistance was not required, other than overnight observation.

As part of the overall review of Prince of Wales, I was asked to audit the operations management and surveillance of our patients, outpatients and inpatients. I reviewed about 1000 out of some 1,500 requests to the Dental Surgeon, whether patients were receiving the relevant clinic, whether their management was in accordance with Prince guidelines and whether they were well controlled. I produced a report for discussion within the staff, Praetor meeting and several conclusions and recommendations for future patient care, made.

A further appointment occurred while I was in Hong Kong. The International Medical Society held its annual conference at the Convention Centre and Surgeon Commander Alexander Walker attended on behalf of the Royal Navy. He invited me to accompany him to a seminar on gunshot and missile wounds being given by a panel of world experts in trauma surgery and vascular anatomy. It was a fairly large, expensive to meet such renowned specialists in their field and so discussion to with found the conference an display concurrently. In addition to this lecture, I also attended the weekly meeting for the senior staff at BMR where subjects included ENT, critical examination of scientific articles and thoracic trauma management at Northwood Island.

As already mentioned, one of the important roles of the RM doctors is the supervision of the therapeutic use of the hyperbaric chamber in the diving clinic on Secretariat Island. This facility is very rarely required for service divers, but is quite extensively used in the treatment of civilian diving casualties. Diving accidents occur on average about once a month on the area and many are occupational divers, to boats being driven mainly Chinese fishermen to sports divers from one of the area's many clubs. During my visit there were three referrals for hyperbaric therapy. The most severely injured was a sports diver who had been diving at Secretariat with his dive computer but he only had two gas tanks on 10 metres and then ran low on gas to 40 metres depth for two periods of approximately 15 minutes each with minimal compression stage on the way to the surface. Not surprisingly he was seriously hurt but was not referred to us, for various reasons, and about 40 hours after the event. On arrival at the chamber he was paralysed with a small cerebral palsy and an approximate T10 level lesion. After 49 hours of therapy following RM advice and with several and leguminous infection, he had recovered manual power but

little x-ray, impressions. He had further decompression therapy and was eventually treated on two BMT with power of about grade 3 intensity and some ventilation post and quite much less on preoperative. With anaesthetic physiotherapy it was thought he might walk in the house albeit with a cane, but all things considered he would probably be lucky to achieve this much.

Of course despite my busy schedule, Hong Kong was an experience not to be missed in many other ways too. I managed to fly around the territory and up to the Chinese border and beyond the rural New Territories and surrounding islands or mainland as well as the more famous shops, restaurants, and bars. I was much very welcomed by all my colleagues and was fortunate to be at the Main at a time of long social crises, including the Squatter Summer Ball. Hong Kong is an amazing blend of modern, Western capitalism and Chinese customs, traditions and superstitions. The words of Charles Fan Shu (a type of folk) were particularly upheld by the local populace and were those of the 'gentle' doctor who claims to ignore the so-called 'big' patients to him, etc.

Essentially the medicine was, generally the same, but with a slightly different distribution of disease patterns and incidence of common complaints, some of which were attributable to a local cost and culture in the culture. For example, the Chinese had much fewer problems with chronic interstitial emphysema and a relatively high incidence of gastroesophageal

disorders, particularly ulcers and of course less of leprosy. Then I had learned to be down while differences and remembered to look for them. The tropical infections, the mites, the mites, much more common. It was also interesting to note the differences between western medicine and the traditional medicine of acupuncture and homeopathic cure, all of which the Chinese would readily accept if the grade doctor failed to satisfy. Adding to the degree of the medicine considered in the fact that, while the society is called by capitalist means, there is no welfare state and the people suffer work or pain. Consequently there were very many sickly in particular during normal visits just to feed themselves. The Chinese are incredibly industrious — from the young entrepreneur to the elderly farmer with his chickens pecking for insects at a pace. Living conditions vary from the primary living in tenements on the Peak, to the average worker with his family in a long, damp, cramped two-room apartment, which would have been condemned for distribution in the UK. Consequently, social conditions produced a few strains of the medicine I had to deal with.

All in all, this course was a lifetime experience both in terms of a medical perspective and the opportunity to discover a completely different way of life with contrasting ethics, morals and standards, not to be judged but to be respected for what they are. In summary, I would thoroughly recommend Hong Kong and, in particular, the chance to learn Medical Codes.

Cautionary Tales

A. W. Lambert

INTRODUCTION

An excellent officer, the thought of making an incorrect diagnosis and later being the subject of litigation is always at the back of one's mind. To minimise this possibility a careful history should always be taken and all appropriate causes of questioning explored.

I would like to present four cases that have produced HSEB, Acutelethra, a deep & complete furrow in May 1992 and May 1993, each with a common theme.

CASE 1

OGI was a 25 year old White Air Engineering Technician who finished on Procedure Alpha to downstart his Furrowcraft in the case of Ouse 90 on 22 May. She was taken to the sick bay and the F.M.S. 4 called by the ship. M.A. stated that she had lost the tide compass for 24 hours and that she had almost finished this morning. Her throat was noted to be slightly reddened and she was pronounced under purple and returned to duty.

Next day, later on 1 June, she saw the same M.A. having worked three hours in the previous 24 hours. She was noted to have some discomfort in her right chest area and a diagnosis of gastric up-throw on this occasion. She was advised not to eat for 24 hours to take plenty of fluids and was pronounced 10 mg metoprolol twice daily. She was started on a stool on 24 hours of the latter.

Later that day she was seen by a medical officer and in this consultation she volunteered that she had missed a menstrual period and that her last one was on 27 March 1992.

OGI's m.c. was positive and she was repatriated.

CASE 2

VL was a 23 year old White female who had been having irregularities in her m.c. coming with her regular periods prior to deployment on Ouse 90. She was noted on Procedure after downstart had deployed on 22 May as her period was also coming on board.

She was taken by the ship's M.A. on 11 June with a three day history of vomiting and abdominal cramps. A diagnosis of gastroenteritis was made and she was treated with metoprolol 10 mg b.i.d. for 24 hours and advised to eat fluids only for the period.

During the deployment she was pronounced against meningitis in the end of May and received two laparotomies. A vesicle in September and October. She had also been pronounced chloroquine and malogon from their co-ordinator as malarial prophylaxis.

The White reported to the sick bay on 14 October 1993 as the result of the m.c. she was receiving treatment for which was for her boyfriend had been helping her to overcome her weight gain by encouraging her to perform exercises on a daily basis to no avail.

During the consultation it came to light that although she had been spotting each month, she had not in fact had a proper menstrual period since 14 May 1992. Clinically she was in her 11th month of pregnancy.

OGI's m.c. was positive and she was repatriated.

Surgeon Lieutenant Commander Lambert is a medical specialist at Royal Naval Hospital, Haslemere, 14th Sea King of training for the HMS-1000 Acutelethra.

CASE 3

GP was a 34 year old Training With Air Signalling Machine, who boarded on 20 November 1965 Day Detachment on duty on the way home from French 10. During the roundabout day returned to being 10 weeks pregnant.

Gynaecologist was positive that she conceived on board with the Captain's approval and the end of the deployment. But this was in haste and due to 100% Overt at the cost of Christmas leave when she has 17 weeks pregnant.

CASE 4

GP was a 24 year old Wren Radio Operator who was placed sick on shore by her local GP because she was feeling ill. She was away from the ship from 18 May to 17 May 1966.

When she arrived back on board although feeling better she continued to feel not quite right, but as the ship was at sea, she thought she looked on with that record of that was made in her P filed it as stages may be well proceed on board.

On 1 June 1966 she formally reported sick as the vomiting was persisting. It was at this stage that clinical questioning revealed she she had been having unprotected sexual intercourse, and that her last menstrual period has been 28 March.

Gynaecologist was positive and she was treated.

DISCUSSION

The outcome of such pregnancy at sea is made a map of these four case pregnancies. None of the pregnancies was discovered on board. What is important to realize is that the Wrens concerned did not seek advice because they knew or thought they were pregnant.

The Wren at case 1 knew she was pregnant but had decided to keep the boy to herself. Her persistence on medical staff was due to a complication of early pregnancy. They thought had flown out and passed for an Air Signalling Machine leave and they had been planning a family. She was convinced that she was pregnant but had failed to share her news with anyone other than a small group of her close associates because she feared the reactions of others. In particular she did not wish to be flown home.

as she thought would happen with the increased recruitment advice given of a pregnancy Wren at sea.

In cases 1, 2 and 4, each Wren had been pregnant at the time of her initial presentation to the authority but this had apparently not been appreciated either by the individual or her medical attendant. In retrospect the symptoms described in each case may have been those of morning sickness and the diagnosis could perhaps have been made at that time if the correct questions had been asked carefully.

From the women at sea a pool of vomit, the loss of disciplinary control or being, as opposed to mild private vomit in their rooms at full emergency and the delays their presentation. The implications of this, but and several diagrams are obvious, particularly when the women concerned are on a deployed ship. It is important that medical personnel often with very limited gynaecological experience undergo an intensive Women at Sea (WAS) PPT to highlight the importance of clinical questioning and consideration of the possibility of pregnancy.

It should also be noted that in all of these cases the Wrens were knowingly having intercourse and were not even though only one intended to become pregnant. One Wren had undergone a routine examination of pregnancy six months previously. Even though the female population effort is a date there are still many who do not understand the workings of their own body and the importance of contraception to avoid unwanted pregnancies. These wife partners should be taught about the importance of contraception prior to intercourse.

In addition to the comprehensive instruction given at regular intervals regarding the methods of sexually transmitted diseases, a higher profile must be given to methods of contraception, particularly now that armed forces ships are deploying long from UK waters for prolonged periods. It is well felt that the increasing air pollution of transmission of pregnancy are that methods of contraception and should be discouraged. With a better educated ship's company and a medical staff who has recently been exposed to a comprehensive gynaecological PPT, personal complications of pregnancy and late diagnosis can be avoided.

Notices

Queen Alexandra's Royal Naval Nursing Service by Kathleen Hartland MA

There are still a number of copies of Mrs Hartland's well researched book on the History of Queen Alexandra's Royal Naval Nursing Service available from the Journal Office at the bargain price of £3.50 per copy which includes postage by surface mail.

Orders should be made payable to the Journal of the Royal Medical Society, and sent to the Editorial Secretary, Journal of the Royal Naval Medical Service, Moulton House, Institute of Naval Medicine, Gosport, Hants PO12 3HL.

History of the Royal Naval Hospital, Plymouth Surgeon Captain P D G Pugh Royal Navy

In view of the centennial closure of the Royal Naval Hospital at Stonehouse the Editorial Committee has agreed to sponsor a reprint of this booklet which originally appeared as two articles in the Summer and Winter 1973 issues of the Journal of the Royal Naval Medical Service. Major General (Retired) Surgeon Rear Admiral A L Rowell OBE has very kindly written a foreword, and Surgeon Captain A L Martin has brought the booklet up to date with a short account of what has happened to the hospital over the past 20 or so years.

The reprint booklet will be available for £3.50 a copy from both Plymouth and Hatter Hospital, and also from the Journal Office at the Institute of Naval Medicine in Gosport. Copies can be ordered from the Editorial Secretary, Journal of the Royal Naval Medical Service, Moulton House, Institute of Naval Medicine, Gosport, Hants PO12 3HL. Please make cheques payable to the Journal.

Letters to the Editor

Sir

Anglo-Austrian Northern Iraq Medical Society — First UK Meeting

The Anglo-Austrian Northern Iraq Medical Society was established during Operation Safe Haven to foster good relations and exchange clinical experience between the British and Australian medical teams. As Honorary Secretary, I have reported our debut meetings in this Journal^{1,2} and here announce the first UK meeting which took place in Britain on 3 December 1993.

Present

Major Commander D Somerville and A. Miller, Royal Navy

Surgeon Lieutenant Commander P Lonsdale and A. Blahos, Royal Navy

Major M Little, Royal Australian Army (attend)

Surgeon Lieutenant Commander J Rastland, Royal Navy (attend)

Apologies

Surgeon Commander C Gardner, Royal Navy

Surgeon Lieutenant Commander F Kemp, Royal Navy

Surgeon Commander S Light, Royal Navy (attend)

Presentations

MEDICAL RESPONSE IN DISASTER RELIEF — Major Little

Operation Safe Haven was the largest deployment of Australian Medical Corps troops since Vietnam. The hard-earned medical team performed well at the field but several important lessons were learnt which have subsequently influenced national disaster relief resources.

Because of the unique requirements of a medical team particularly in the context of disaster relief, the medical infrastructure must incorporate unique medical personnel to represent medical needs effectively. This change has been successfully incorporated into an Australian Unit deployed in Somalia.

Tasking may vary with a unit but not only consisting of battle trauma but also pandemic threats arising from land mines, infectious disease and chemical disease. Medical teams need to reflect these requirements and be prepared to offer a rapid response.

Further discussion ensued regarding distribution rates among the UK and Australian forces during Operation Safe Haven. Durrheim had both defined as more than two hours minutes per day, and the frequency of new cases per week (NC) recorded. The Australians experienced a 9% NC rate which compared to 13% for UK contingents. It was suggested that the Australian practice of giving 100 mg Doxycycline daily while in the field might in part account for this difference.

THE BOMBING OF HMS JIFF INTAL — Surgeon Lieutenant Commander Lonsdale

Lens prevented the 24th patient boat that the HMS Jiff Royal last year from causing serious damage and human loss, regardless the conditions were placed maintaining its focus of safety and general awareness at sea.

The principles of debridement and drainage with delayed definitive surgery, so effective during Operation Safe Haven, was applied. One casualty had traumatic amputation of his right hand and required exploration of an abdominal wound from which a large haemorrhage of clotted blood was recovered. Another required open wound of the right knee due to extensive shrapnel impact. All casualties had fresh burns. This unfortunate incident underscored the need of surgical teams at sea for decompressed how quickly these services can be established.

SHAWN BURLAND

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2. Rastland S V. Letter. *J Roy Soc Med* 1994; 87: 230-231.

The following comment (with a few additions) by the Journal office

For

Eye opened on blindness. The story of St Dunstan's

The caption itself did not fool me. One morning I was talking to a colleague, then I discovered he was blind. When I asked, he was deaf and I was blind. An 18th period book had suggested, several years later, I was asked if I would had rather been in my colleague's place. Thanks to St Dunstan's, the answer was a firm 'No'.

Something similar has happened to over 6000 Service men and women since the outbreak of the First World War. St Dunstan's was founded in 1919, precisely to offer hope and those skills necessary to regain a purposeful life, to those who have lost their sight in the Service of their country, and to aide for their widows. Lots of women they were many years later, but as long as the cause is identifiable as Service, their benefits will be awarded.

Today there are some 650 St Dunstanians throughout the United Kingdom. They play an integral part in the rehabilitation process, for who better to counsel than one who has been through a similar experience. This moral support and counselling went with the moral hospital visit when a St Dunstanian meets the personal member. Rehabilitation is vital at a time when the way is open to have going to us and for the nation. As soon as possible, the rehabilitation process commences at our training centre in England.

Trainers have comprehensive skills — health and computer handling, mobility — working about with the aid of the long white cane, and

fully living skills — learning to live independently. Areas and facilities are encouraged to participate in the progress.

The aim of St Dunstan's training is to assist its beneficiaries to as normal a life as their handicap permits. Training only extends outside colleges or universities, to pursue further education or further vocational training in England. St Dunstan's is proud of its work record from physiotherapists to psychiatrists, from telephonists to teachers and from computer systems analysts to social workers. Play is an integral part of living. Many training weekends take place in England. Facilities exist for military handling, outdoor skills, mobility, pattern training, and bridge to name but a few.

The organization's direct money work consists of raising, throughout the country, the equipment and maintenance of properties owned by St Dunstanians or rented from the charity. Welfare staff visit every details, are there to play to assist they are in receipt of all their entitlements. The London headquarters has personnel, finance and accounts staff to help and advice. Financial grants are available to St Dunstanians to help maintain a quality of life.

Thus what could be spread as the most dramatic event of one's life can be turned into a positive experience and first hope and reliable operation. St Dunstan's is a charity that is not Government funded. The organization depends upon the generosity of the public, in order to carry on its work.

For more information, please contact the postbagged at PO Box 658, 12-14 Haywards Street, London W1A 3SL.

RAYMOND L. BAZZAN
Public Relations Officer

Book Reviews

ABC of Monitoring Drug Therapy. 2nd UK edition. M Hardman. D/F M B, London. Pp.44. BMJ Publishing Group, June 1992. ISBN 0 7279 0570 0. Overseas £9.00.

This short softback booklet is one of the ABC series of concise articles originally published in the *British Medical Journal*. It is typical of the series in being well produced with clear type on good quality paper. The large pages allow the text to be arranged in a spacious and visually pleasing format. Key learning points, caveats and cautions are highlighted in boxed areas while case histories are printed on a darker background. There are numerous concise graphs and diagrams which are a model of clarity and which serve to highlight points made in the text. Most of the colour illustrations, while numerous, add little information. The overall impression is that of an attractive and readable booklet.

The topics we covered, each being no more than four pages. After an explanation of the reasons for and the techniques of monitoring drug therapy and a discussion of patient compliance, specific drugs are covered. The chosen five classes are groups of non-steroid analgesics with narrow therapeutic index; drugs for which measurement of plasma levels, makes accurate dosing difficult; four of these digoxin, phenytoin, theophylline and theamylorazole are discussed; a lot of monitoring relevant to many readers of the *BJMJD*. Coughs and fibrinogen, also frequently encountered. Finally there is a chapter on the opiate, not all drug monitoring which is there the reader to see the value in the drug level in other words to interpret the level in the clinical context.

This is an informative booklet, well written, clearly directed and attractively presented. It contains much useful information and deserves to be read by all hospital physicians. General practitioners, pharmacists and chemical pathologists will also find much of interest.

WJH

Aravenous Vascular. Third edition. Richard M Harding. 2 vols. M.B. Pp.218. BMJ Publishing Group, October 1992. ISBN 0 7279 0570 0. Overseas £15.00.

This is the third volume of a very serious, authoritative and readable book on all aspects of

vascular medicine. Originating from a series of articles in the *BMJ*, it is primarily directed for vascular doctors, who tend to over-rely on yet sufficient background information about potential vascular medicine problems in everyday practice. The patient focus is by far the best personally. A new edition in the theory position of the legal implications of the good vascular system of disease management is particularly timely.

However, the information is just as relevant to the ordinary doctor and the book, a good volume is a standard bedside text. This volume is considered as an essential adjunct to the *BMJD* and reference for Med courses in *BMJ*.

APG/P

ABC of Healthy Travel. Fourth edition. J. Walker. G. Williams. Pp.44. BMJ Publishing Group, June 1992. ISBN 0 7279 0570 0. Overseas £11.00.

This is another of the very useful publications in the excellent British Medical Journal ABC series. The first edition was published in the first volume of this book, but with the emergence of travel medicine, as a separate discipline, monitoring, treatment and infection, physicians, general practitioners and the travel industry with the common aim of improving the health of travellers.

The ABC of Healthy Travel is an excellent book providing clear, concise guidelines to travellers and those whom they consult. It is the second ABC volume with good illustrations, lists of key points and clear headings.

The chapter on immunisation gives definite advice on recommended vaccines. Such vaccine is more down-to-earth and there is a good summary alongside in a box that includes the 1992 case of the vaccine which is useful for comparative purposes although it is not clear whether the program is the NHS part or the actual cost of the products. In general I would agree with the authors' advice — they have avoided the usual problems of being over-cautious in their recommendations. The malaria chapter is also very useful and contains much good advice on areas often visited which are at very low risk for malaria although only 0.5% only reported as being malarious areas, and advice about coverage in the UK who return to their home countries.

The chapter on travel and vaccination

often useful practical advice on the problems of not seeing patients on an island. I would also read it with the awareness of the authors' attitude that most people sleeping over 10-200 h will get some treatment within. Certainly they are in risk of it but perhaps they would usually be regarded as just the increase in people going on high altitude trips. The first and longest has many useful tips.

Overall this is a book which should be every GP's bedside and every military. It also contains a useful summary chart with which to discuss the well of your sleeping crew!

ARJON

ABC of AIDS. Third edition. Ed Michael W Adler. Pp 96. BMJ Publishing Group, June 1995. UK price £12.95. Doreen £15.00.

This is the third edition of this excellent and useful publication in the popular ABC series and it contains several of my criticisms of previous editions. It is only two years since the last edition but there have been enormous developments in our knowledge of this HIV infection during that time and they are well reflected in this book. There is one additional chapter on AIDS in the developing world and all the original chapters have been completely re-written rather than just touched up.

Like other books in the series, this one makes frequent use of figures, captions and high quality colour prints. A particularly helpful feature is the use of text boxes of key points, that serve to get the message across clearly and concisely.

Overall it is a well constructed book there will be duplication but this book at least has information in a logical place and is well indexed. I will find that the Chapter on the virus should include at least an area on transmission of the virus in order to replace such terms as 'sex' and 'IV'. In fact this chapter seems to be largely unchanged from 1990. The chapters on sexual history and early HIV infection have been merged (as I suggested in my critique of the last edition) and this is definitely an improvement. However although Maudsley Hospital LHM consider open sexual cohabitation of the kind at which one might be concerned about sexual stages of disease (page 94-95). The chapter on AIDS and the lung has been completely rewritten and is better than its

predecessor.

With a chapter on gut involvement is welcomed and while still being readable one feels that something more have happened in the last two years. The rapid developments in natural therapy are reflected in a longer chapter unfortunately written before the results of the Canadian study became available. However Wright seems to give reason to environmental therapy and use of individuality.

The chapters on counselling, nursing care, treatment to be avoided and give good practical pointers. Overall the content is high standards of the last edition and the updating and improvements fully justify the new edition. It should continue to be available on any ward or department where HIV positive patients are being seen.

ARJON

ABC of Sleep Disorders. Ed Colin M Shapiro. Pp 104. BMJ Publishing Group, November 1995. UK price £12.95. Doreen £15.00.

This book on the highly controversial ABC series is an excellent addition. Based on research in the BMJ recently but augmented by chapters in the majority between polysomnograms and sleep the various systems and sleep and the medical aspects of sleep. It follows into the sections of the airway that takes up a third of our time.

Colin Shapiro is a Canadian physician who leads a multi-disciplinary team who address the purpose of sleep, aspects of sleep disorders, including those of the conscious, of the sleep in physical and psychiatric disorders and some of the occupational aspects of sleep and its link. Five chapters are concerned with the connections between sleep and sleep, covering psychology and non-psychological drugs, symptoms and sleep drugs and related oral knowledge drug.

The quality of sleep is related to mental well being and is much of it in the daytime character and performance. All doctors deal with patients with sleep disorders and their colleagues have in general practice all branches of hospital practice and probably most importantly in occupational medicine. This fascinating book is a source of valuable insight into such disorders the depth of the small understood physical and mental and its disorders which can be treated with understanding, sympathy and new with rational therapies.

BHT

Obituaries

**Chief Petty Officer Medical Assistant
Frederick James Thomas MacLaughlin CSM**
died on 28 June 1983



*Sergeant Peter Robert A Craig served
CPL661A P 7 Transport Mail Air 644-29 CSM died
on 24 June 1983. He joined the Royal Navy at
the age of 16 and served for 37 years. He held
Commando and Helicopter and Aircrew Warfare
courses. He was a first Sea King crew who will
always be remembered for his devoted passion
and efforts towards an improving the crew of
rescue. Whether experiencing a cloudy
horizon, his helicopter crewmen 300 feet above
any rough seas, working under his three ton
loads in the RAF in the Arctic or finding an
an extraordinary place in the first line of rescue.*

was impossible, but his agile mind and practical
hands.

On 27 June 1978 whilst providing medical
support in a company of 40 Commando RM
during a gun battle his work took him to the
Champion Road of Helms, he was injured in
a road accident to hospital. On his return the
commander for was driving some under the and
PCMA MacLaughlin was in the chair. He
refused help and whilst his colleagues helped
found that another civilian had been involved.
Completely disregarding his own injury he
drove through the sea of his to the wounded man
and accompanied him to hospital. There he made
sure the casualty was cared for before continuing
to be examined himself. It was found that a bullet
had entered PCMA MacLaughlin's right chest,
damaged his lower arm and lodged in his elbow.
He required an immediate emergency operation.
For his act of outstanding courage he was
awarded the George Medal.

Months later, although fragments of the bullet
still lodged near his spine and he was given a 10%
lower figure, he volunteered to return again for
himself. He looked down on support of the
Commando. His disregard for his own safety
his lifelong commitment and his commitment and
loyalty would approach it in complete as all. A
mural photograph will be unveiled at the
RN445 Helicopter Division on 6 April 1984 under
provision of his wife and family.

We have received the following personal
memorandum of Sergeant Peter Robert A Craig
Frederick James Thomas MacLaughlin CSM, who died 22 October
1983 from Sergeant Peter Robert A Craig for the
Commando.

Dennis was a delightful colleague, most
considerate and helpful to all who worked with
him. I was fortunate enough to serve with him
on these occasions over the years — about
King Range and Helms — and our friendship
grew accordingly. He qualified as a pilot in
1958 joined the Royal Navy in 1959 and after
two years of reserve jobs he was posted out to

Eight in 1955, returning them for the first five months of the war. He was recruited to RAAF Pterodactyls (L2) Squadron, now sporting a lion, but he was sent off on courses and duty elsewhere for F402. After the war he went to Hong Kong, and to SASEO he was the moving spirit and prime pleasure in the exciting move to a new Royal Airfield in the heart of the Peak. There, nevertheless, years later after the shrapnel of the war and then a spell in MOC at Transvaal before returning to Britain for what probably appeared to be his retirement. In 1960 after he had spent his farewell party at the Mass, his accident in a SRA, died unexpectedly and Thomas was promoted to Flag Rank and to MOC RMA Mole.

He was a quiet, modest man and a charming and loyal friend. He remained a bachelor, was an avid reader, fond of music and a very temperate golfer. All well agree he was a meticulous and splendid host. On this characteristic I have a happy and amusing memory. Thomas had a prospective daughter-in-law to whom he was engaged for a while, but, of course, a well known story at Pterodactyls he knew it by the RAF — no need — to hint for the Captain. All this went well except that the supreme volume of the man came, completely and very obviously into the shadow of the coming victory.

Rest well, Thomas. We will all miss your Christmas, Lent, and Easter.

We have received the following short obituary note of Surgeon Commander Thomas Lawrence Joseph Barry Royal Navy who died 4 November 1993 from Surgeon Commander (R) R A C. Cliff Royal Navy.

I knew Surgeon Commander Tom Barry in Singapore in 1941 when he was serving in SASEO

Bombing and I was serving in Pterod. My duties in Bombing brought me into a professional relationship with him. He was always most charming, and he used to invite me to play tennis on a brand new rubber court, built at Singapore.

We spent an evening in the house on 22 July 1995 of Surgeon Lieutenant Commander Michael (Jack) Gerald MBE RNR and on 18 November 1993 of Surgeon Commander Stephen Gerard Brundage Royal Navy.

We have the heart of the death on 19 October 1993 of Surgeon Lieutenant Brian Alderson Knight RNR at the age of 95. Surgeon Lieutenant Knight joined the RNR as a Surgeon Lieutenant in 1914, qualified MBE CMB in 1914 and served as Surgeon Lieutenant until 1928. He also spent in command the ship on 14 September 1930 of Surgeon Lieutenant William Maxwell Brown Royal Navy who survived the sinking of HMS *Devon* in January 1942 (see *J. Roy. Nav. Assoc. Rev.* 1984, 74: 177-182) and in 20 October 1993 of Surgeon Lieutenant Commander Henry Kenneth Vickers MBE RNR, who became the first demobilised to be appointed to the Royal Navy in RMA Harker.

We have now been informed of the sudden death of Surgeon Commander Peter Dennis Anthony Durbain Royal Navy on 20 December 1993. An obituary will be published in the Summer issue. We have also been informed of the death of Surgeon Commander Charles Arthur Wilton Miles Royal Navy on 4 November 1993. Any personal reminiscences of the above officers will be welcomed by the Editor.

SERVICE NEWS

ROYAL NAVAL MEDICAL AND DENTAL OFFICERS

APPOINTMENTS AND PROMOTIONS

As Quota 1 Reserve Surgeon

11 September 1983

Surgeon Commander M F W H Funn

*As Medical Officer in Charge,
Institute of Naval Medicine*

16 July 1984

Surgeon Commander D M Crane

As Professor of Naval Medicine

1 March 1984

Surgeon Commander A R O Miller

As Consultant Advisor in Otolaryngology

in MRCP (O)

1 March 1984

Surgeon Commander J Noyce

As Consultant Advisor in Accident Medicine
in MRCP (A)

1 October 1983

Surgeon Captain W R H Batecock

To Surgeon Radiologist Commander (R)
in F & T (Gen)

To Surgeon (Lithology)

D A Matthews, C D Porter, C J And, M J Crane

To Surgeon Lieutenant (R)

M E Davis, P D Moore

Provisional Surgeons for Promotion

on date 30 June 1984

To Surgeon (Dental)

G A Cunningham, S D Shepherd

To Surgeon Commander

P J B Ward, R D Baker, G L Roddington

C Taylor, P J W Girdling

To Surgeon Lieutenant (R)

C R Funnell

HIGHER QUALIFICATIONS

Surgeon Lieutenant Commander A J D Hall —
Dip. A. 1982

Surgeon Lieutenant Commander P A Hughes —
FRCS 1983

Surgeon Lieutenant Commander S A Johnson —
MRCP

Surgeon Lieutenant A Forbes — MRCP

COMPLETED GENERAL PRACTITIONER VOLUNTARY TRAINING

Surgeon Commander S D Fong

Surgeon Lieutenant Commander M S L Glison
S A Johnson, A P Wilson, P W Dryden

ATTAINMENTS BY JUNIOR DOCTORS

Surgeon Lieutenant P D Edwards has passed Primary
FRCS (Otolaryng)

Surgeon Lieutenant Commander C E Peters has
passed Part 2 FRCS in Otolaryngology

Surgeon Lieutenant A R Dendle has passed Part 2
FRCS (Gen)

Surgeon Lieutenant C J Hall has successfully
completed Part 1 FRCS (Gen)

Surgeon Lieutenant Anna Lisa M Jenkins has passed
Part 1 MRCP

CONSULTANTS, SENIOR SPECIALISTS AND SPECIALISTS

The following professional appointments are
in commission

Consultant

Operational Medicine

Surgeon Commander P J Hanna

Specialist

Anaesthesia

Surgeon Lieutenant M W Dorset

General Surgeon

Surgeon Lieutenant Commander M J Mathewson

NEW ENTRIES

Surgeon Lieutenant (R) A A Barber

C P A Parker, S M Denny, I M Peters

I Jones, R J Laydon, A C M Yeo

Surgeon Sub Lieutenant Vernon J. Bennett
 T. C. Ransom, D.F. Henry, J.D. Ranshays
 Emma J. Rastomowski, R. A. Reed
 Surgeon Sub Lieutenant (SB) R. C. C. Mulgrew
 L. A. Renshaw

PLACED ON EMERGENCY LIST

Surgeon Lieutenant Commander P. R. Robinson
 T. Wick

RETIRED

Surgeon Captain M. J. Mann (died)
 Surgeon Lieutenant (M) N. Jeffery, A. E. J. Hodges
 C. D. Hughes
 Surgeon Commander (SB) R. G. Davis, J. R. Bates

LIST OF SERVING OFFICERS

Surgeon Commander M. Bach has been elected
 President of the new Society of Assistant and
 Emergency Medicine

MEDICAL SERVICES

AWARDS

Medical Assistant A. Barker has been awarded a
 Bronze Medal for Excellence by the City and County
 of London because for his work in qualifying for his
 Certificate in Emergency and Clinical Care. For a
 month, his Medical Assistant training

The Royal College of Physicians has been
 awarded its Chief Park Office Medical Institution
 (M) C. A. Butler

APPOINTMENTS AND PROMOTIONS

To Commander
 P. Reed

To Lieutenant Commander
 J. McCulloch, R.M. W. J. Bailey, R. E. Jackson

Selection for Promotion 1954

To Group Chief Medical Technician
 M. Jones, P. W. Haddow, P. J. Duffin,
 J. J. Williams

To Chief Petty Officer Medical Assistant
 M. D. Wyllie, M. A. Adams, D. W. Funn
 J. J. Cline, R. J. Cox, P. J. Buxton
 M. P. Pacey, P. R. Dwyer, J. J. Cooper
 M. R. P. Renshaw, R. D. Luchford
 P. A. Hargrave, R. D. Hargrave
 R. C. Fotherby, D. M. Hume, P. W. Johnston

QUEEN ALEXANDRA'S ROYAL NAVAL NURSING SERVICE

APPOINTMENTS AND PROMOTIONS

As Director of Naval Nursing Services
 and Medical in Chief Q. Quinn
 H. Phipps, D.M.
 Principal Nursing Officer C. M. Taylor, A.R.N.C.

To Superintending Nursing Officer
 R. A. Russell, C. McCulloch

Selection for Promotion 1954

To Chief Petty Officer Naval Nurse
 M. R. Renshaw, P. A. Luchford, R. J. Dwyer
 M. A. Adams

To Chief Petty Officer
 Clinical and Operating Assistant
 D. P. Hume

NEW ENTRIES

Nursing Officers R. E. Hayward, R. Jones

TRANSFERS TO FULL CAREER COMMISSION

Superintending Nursing Officers R. Coughlin
 L. Gorton

TRANSFERS TO RESERVE CAREER COMMISSION

As in Nursing Officers C. M. A. Douglas
 M. R. Bailey, J. A. Phipps

ROYAL NAVAL RESERVE

PLACED ON RETIRED LIST

Surgeon Commander R. D. Rogers, D.M. — Colours
 Surgeon Lieutenant Commander R. P. Green, R.D. —
 Colours

Surgeon Lieutenant Commander D. R. MacBryen —
 Colours
 Surgeon Lieutenant Commander R. T. Morgan —
 Colours

Surgeon Lieutenant Commander M. N. Colburn —
 Colours
 Surgeon Lieutenant R. T. Hume — Colours

REMOVED FROM ACTIVE LIST

Surgeon Lieutenant R. P. Farnham — Colours

RETIRED

Surgeon Lieutenant Commander J. R. Hall —
 Flying Star
 Surgeon Lieutenant Commander C. R. Green —
 Flying Star

ARE YOU CORRECTLY ADDRESSED?

The names and addresses of subscribers to the Journal of the Royal Naval Medical Service are being transferred from a card index system to a computer database which, it is hoped, will be more accurate. In order to ensure that this database is as far as possible kept up to date, subscribers whose address details are at present incorrect are asked to complete the new self-fill form below and return it to the Editorial Secretary. The form may also be used to notify future changes of address.

To Editorial Secretary, Journal of the Royal Naval Medical Service, Monahan House, Admiralty
Comptrol, Room P0411 21A.

Please print my current/last^a address:

SURNAME

INITIALS

RANK/TITLE

HOME*/OFFICIAL* ADDRESS

Town

County

Region

Postcode

Date

* Select as appropriate

Frontispiece



Sergeant To VC Adjutant A. L. Barrett QMC F.F.A.B.C.S. welcomed by his appointment as Sergeant at Camp at 100. 10 August 1994.

Editorial

Whither the Journal?

Emergency medicine and other medicine in the

The Royal Naval Medical Service and its Journal sit, poised on the threshold of challenging and exciting new chapters in their long and distinguished histories. As times change and the world's service changes with them in preparation for change are joined with our sister Hospital Services, what might the future hold for us and what role should the Journal seek to fill?

The changes likely to result from the Government's Beyond 2000 Study of Medical Services offer new opportunities for all in the medical branches of the three Services to meet and work together to discuss and then improve the high standards of care we have given Service and civilian patients in peace and war. On the other hand, for many the threat of change has seemed more ominous for their own future than that of their Service.

There is no doubt that any genuine merger for services, as an individual level, is out of the question. As Defence Medical Services enter more solid institutions as viable opportunities. For the Royal Naval Medical Service as a whole there will be a need for good will, good luck and good helpmate to ensure that opportunities for improvement are seized and developed without any undue stresses.

That said, some successes have been achieved by false promises. None has been more unfulfilled than that old inspired belief that there will give the most satisfaction was a single people Defence Medical Service. Here we consider the unfulfilled Medical Services of the Royal Navy, Army and Royal Air Force are to remain separate from our medicine, such but neither, as patient service, by us, new Defence General.

We should take strength from this as a dedicated high level appreciation of the experience of the fundamental of knowledge, modifiable differences which work out and build together, those who change its process, to the Royal Navy rather than the Army or the Royal Air Force. It suggests recognition of the practical value of our experience and knowledge of the experience, amphibious, and naval aviation environments passed through living, training and operating with the rest of the Royal Navy and Royal Marines.

Each of our three Services, as well as the Royal Naval Medical Service have made enormous contributions to those in the fighting, both being lost and better equipped in the course of operations. Commanders have found the value of having ready access to reliable, practicable personalisation advice, from experience on a vast range of topics relevant to the health and safety of their people in peace and war. It has been proved repeatedly that trained Royal Navy medical and surgical teams can be deployed quickly and effectively and will not be distracted from their life saving work by the rigours of life away from the hospital environments where they practice in peace what they will be called to do in war.

To complement the advantages to be gained by integration of necessary care under the guiding hand of our new Defence General, so what we send our good wishes, it is vitally important that we retain the strengths derived from our single Service identity and ethos, and continue to share in sense of common purpose. Good communication will be vital to success and it is intended that the Journal will play its part.

Highlighted in no new cover, a new logo and a new theme, links within and beyond the Service by increasing its appeal through greater topicality over a wider range of subjects than before — while maintaining the standards expected of the internationally recognised, published, printed in his Service. Top-down communications came on this subject which has been held back from the scheduled date for publication to include a message from Surgeon General Admiral Craig, who took up his appointment as Medical Director General on 11 August. Messages from HMDGPs and senior members of the RQAF, naval medical establishments and Fleet HQ will become regular features.

Thus your Journal, known affectionately and for so apparent reason as the Doctor's Chronicle, can play its part in ensuring the health and prosperity of the Royal Naval Medical Service. Each edition should be a balanced mixture of topical, high quality news, news and views, without undue appeal — a tough target but one that can be achieved with your help. It will, and will thus provide and past members of the Royal Naval Medical Service, and those who work with them, can make contributions, which will allow the Journal to serve. Over to you!



Member of the Association of Service Newspapers

Our Way Ahead



The first volume of the Journal is as published in January 1945 with the varied mix of pioneering writings of Naval medical and scientific material. In the early days it was noted that the contents might be useful for naval and hospital care, correspondence and letter Service news. These aims and objectives remain and provide the foundation for the new Journal's endeavor to continue the Journal's appeal and broaden its readership base.

For many months, that first issue contained a wealth of information and addressed a range of issues — many of which continue to make our careers today. The Medical Department of the Imperial Japanese Navy stands as of the vital early role to be played in ship design. Often, all of the importance of interoperability of equipment and maintaining flexibility in the use of available manpower in planning the medical operations for war (including the Personnel who kept the patient tightly under observation — now carefully). They are necessary of environmental hazards being evident and that they are necessary of those of being surgical and medical conditions, standard planning, health care, the treatment and handling of prisoners.

and the information required, courtesy of the Medical Officer's Journal to make a typical career.

At the Nelson D. Day conference, the speaker approached the Journal of that era, gave my opinion. It was the end of January 1946, when speakers left an understanding of the constraints of war time history. But a comprehensive article describing the administrative arrangements at HMAS for the support of the hospital was published. As you can see, in the original version of the issue, outstanding issues between the Army and Navy medical services was central to the success of that support. As there will be, even a closer future between the three Services is again very important. Issues highly in the post-World War years, mentioned by, the Defence, Case Study.

The decisions arising from Defence Case Study Group 12 (Medical) will have major implications for the Royal Naval Medical Service. Other studies, including those concerning research and development, equipment, training, organization and budgets, may impact on our future. The principles and concepts underlying the DCS 12 recommendations address standards of care, targets for direct, indirect, operational medical support (which will be medical, rather than medical, direct), the Hospital/Service have not the potential training base.

In secondary care, the Study confirmed the requirement for a unified hospital service and recommended that this should be managed as an Agency, based by a Chief Executive, reporting to DCS (Programme) and Future Development, the Program General. This agency, as a concept, is a main Joint Service Hospital at HMAS supported by four Military Group Hospital Units, including one at HMAS, and it is to bring the medical services, including the support, together for the, considerable operational work. Further, the support will depend mainly on a more totally, significant, future.

On the training front, the Program General is to be supported by a Chief Service (DMS) with a regional, some, I anticipate that single Service Units will be accessible to him and that the Royal Naval Medical Staff School and the School of Naval Medicine will be called upon to make a significant contribution to the training organization.

Joint Service will remain in Medical Officer's Journal who will be responsible for personnel

of primary care, which in the Navy will be more closely integrated general practice and occupational health services, and for overall provision of operational support in times of crisis. While there will be some continuation of joint or co-ordinating groups to enable staff to be used to maximum effect in Service Training.

Senior functions in primary dental care will be transferred to an Service base. The intention was to do this in a more agency style: the staff of headquarters for provision of subordinate practices, services, but not those that are always well provided, as long as the staff were by making changes and then I anticipate that the Defence Dental Personnel Service will continue to provide an valuable, wide ranging support services, from an Admiralty base.

Within planning the success of the implementation work of DCS 15 has ensuring that management reduction and further centralisation will be necessary, two open deserve early attention. On the operational front, with the likelihood of greater in Service assigned support, at third line RNMS units should be provided, when required, as classified units and not as individual vessels. It should be enough for one to be able to support. Naturally, similar will have served the Royal Navy well in the previous process of service for us up, and we, going to make its own process and situation. There will be a common programme on ongoing project about education available to them, as there has been, and will be for another staff.

The enhanced management reduction may bring into question the viability of some of the smaller branches and require us to pursue greater progress, within the RNMS or as a lone Service base, in addition, underlying the proposed UK secondary care to Service but negotiations in the management that confirmed personnel are required in first, second and third

line for medical support and that they should be of the same Service as first line, if possible, is valued but has to be done from any Service, as far as the Navy. The current deployment staff can still training in joint form will be crucial to effective operational support across the three services. Availability of education of staff will be necessary if this close cooperation is to succeed.

Adoption of arrangements for personnel involved in Primary Care and Occupational Medicine will appear to be necessary to promote greater integration and cohesion. Uniformed have requested for support in the National Contingency Force, continued and control of medical units and advice to Commanders will be provided. Other posts will be examined to determine the replacement and where this is proved, it should be met by uniformed or civilian personnel, perhaps under national arrangements.

There can be no doubt that major work taking a long period, particularly in the uncharted waters of Military Service Hospital Units and in the responsibility of support, but a real opportunity exists for personnel in Service assigned support within line of single Service, always. This should allow us to realise the benefits highlighted in the operation of two World Wars, by providing support in procedure for what will be required of us in a major conflict.

The members of the draft Report on DCS 15 concluded: "We have had an excellent meeting and genuine leadership from medical and senior management in the medical services during the painful period of transition. I am confident that I am pleased in that leadership and will seek to keep you all as fully informed as I can as matters develop."

A. Ding
Surgeon Rear Admiral
Medical Director General (Naval)

QARNNS — Update

QARNNS signs a New Enlistment ... whatever time

Does it surprise you with their insistence on teambuilding and recycling? No wonder, since for most individuals the likelihood of return service at sea as personnel will be extremely rare. QARNNS Medical Association at sea will however be much more usual.

In fact our service is nothing but. Naval Nursing Teams first served at sea in the Hospital Ship *Alexander* during the Korean Expedition in 1951/52, even then they, and their QARNNS colleagues, have served in many wars and major conflicts from the First War to the Gulf.

With the changes in requirements for continuous planning and ensuring the ongoing medical facility accepted by serving QARNNS personnel did not cover all circumstances and needed to be broadened.

In future time it will only be the QARNNS Medical Association who will primarily serve, as we have not been able, the early operational support requirements and afterwards in the operational role, back ashore and abroad. QARNNS serving officers and ratings need a broadened sea liability. Now, starting joining QARNNS on or after 1 April 1994, have a new liability as a confirmed service, so most QARNNS members will have a liability, called the volunteers. It is currently serving personnel in secure serving roles is available whenever required.

How to the volunteers? — QARNNS Officers with gold bays? Yes, we have agreed proposals to take RN rates and badges of rank with volunteers that we are serving officers. — QARNNS ratings with RN medals and rate badges some years ago. It is hoped that these changes will be completed by late '93 and whilst we will be very well in the pleasing role of our ratings badge off is not lost, we are keeping the Colonel A.C. of HM Queen Alexandra's Regiment. More details will be published in a later edition of the Journal.

Ensured success in the QARNNS personnel in training and learning. Broadening the currently serving personnel in domestically, both operations in domestic. More in education systems, and developing professional practice advancing the evidence-based and expanding their own knowledge and expertise, we are adding our universal skills and a change of image as well. Any group that has the all work, and no play makes for staff personnel. QARNNS officers and



rating officers, in the other hand, are generally the other way around. The RN during the QARNNS 1991-1992 Expedition Time of Canada, a RN is an English Ship at Baffin Bay and QARNNS has been operational in the Caribbean or RN means to supply means, broadening, using, sharing, using, social community and attitudes. Several will be members of the 1994 College of Naval Nurses and the staff of a last opening, provision all aspects of Dental are considered both military, civilian and navy, in providing and learning. QARNNS has been focusing on the point in being able to recruit and retain highly professional well motivated personnel who are keen to the location of serving within the UK. Whenever the lower fields are first priority with always to the Patient and the provision of the highest standard of nursing care possible, whatever the circumstances or location.

C M Taylor RRC
Principal Nursing Officer
Mexico in Chief
QARNNS

Recent advances

Magnetic Resonance Imaging

J. I. C. Hogg



On 9 March 1994 His Royal Highness The Prince of Wales opened the new Magnetic Resonance Imaging (MRI) Unit at BSH (Baker) Dares, an area long used in the hospital to support the ambulance and awarded a commemorative plaque before leaving with its a sense of great ceremony for the RMMS.

Augustus Constantine Hogg is Head of Radiology at Royal Naval Hospital, Haslem.

for Prince of Wales, a new giant cross platform multi-slice focused magnetic resonance the hospital. The arrival of MRI at BSH (Baker) Dares represents a dramatic step forward in the diagnostic services that the hospital can provide and will much enhance the hospital's reputation as a centre where the highest quality technology remains in forward supply nationally.

MRI has arrived on the UK medical scene in the relatively recent few years and made much

makes anatomy. Its technological evolution has progressed faster than that of the now familiar Computed Tomography (CT, CAT) it is a comparable stage. Some studies may therefore feel better rewarded by the type of the media coverage stimulated by the jargon which the technology has spawned or simply aware of what MRI may have to offer medical science.

The following review of MRI is intended to explore the clinical applications of MRI to dispel the more commonest hard myths regarding what is involved when patients undergo MRI, and to explain the grounds upon which the technology will prevail in NMR. Harker

MRI EVOLUTION AND PRINCIPLES

For many years scientists have known of the existence of nuclear spins and that charged spinning nuclei could be deflected from their normal spin state — as experienced in magnetic resonance — when placed in a strong magnetic field. The combination of Nuclear Magnetic Resonance (NMR) in that spinning nuclei, with resonant magnetic moments may, under the correct conditions, reveal a patient's internal structure and in some degree of contrast (or resonance). The characteristic nuclear magnetic forces and the associated can be conveniently altered by differing chemical environments surrounding the altered spinning nuclei. This forms the basis of a powerful and long established chemical analysis technique known as Magnetic Resonance Spectroscopy (MRS).

The basic principle of MRI is as follows. When subjected to a strong magnetic field, spinning positively charged nuclei (eg hydrogen) would come to precess like spinning tops in a disciplined manner and under the correct conditions, as a precessing magnet. When these spinning nuclei are then exposed to pulses of radio-frequency (RF) energy, they absorb the energy and in doing so change their position. The completion of the absorbing RF pulse the atoms seek to regain their resting equilibrium state and in doing so emit the absorbed energy as a measurable RF signal. This RF signal is the diagnostic quantity which MRI is all about and it is this signal which gives specific information about the abundance of atoms locally, the proton density, in the tissue being examined and, according to the rate at which the signal is returned about the pathophysiological environment surrounding these atoms.

Progressing the MRS principle from spectroscopy (MRS) to static image production (MRI) was inadvertently greatly influenced by the

misconceptions in computer technology which existed in the 70s and 80s with such production of CT scanners and now MRI scanners greatly influenced by the misbeliefs in computer development. Progress from pure spectroscopy (MRS) to static imaging (MRI) is usually attributed initially to two Americans in 1973 but thereafter the search for a speed solution. Unintentionally the search — usually groups in London, Nottingham and Aberdeen — was amongst the poorest. Survival among them had already led the development of Computed Tomography (CAT/CT).

The essential problem is by speed up by those promoting the development of MRI was that of increasing previously the point of origin of the RF signal within the dense media examinations. This has been achieved usually through the ability to finely adjust the strength of the accompanying magnetic field and to effect these changes in magnetic field strength the so-called magnetic field gradient is great speeds, in great exposure rates, where necessary and with the utmost accuracy.

PRACTICAL MRI

To actually MRI a patient lies on a motorised table top and, after preliminary selection and positioning of RF transmit/receive coils, is introduced into the bore of a very strong (2.0-5.0 Tesla) magnet (Figure 2). The magnet looks like a CT scanner except that the bore, or tunnel, is about five feet long and, although well shielded and insulated with polystyrene insulation (styrofoam), is a patient (and the conventional computerised) chair in the centre of the magnet, held the patient is subjected to sequences of RF pulses and magnetic gradients so that the spinning charged nucleus can be manipulated and the resulting signals located.

The correct selection of pulse sequences and the chosen range of values. MRI operating parameters are what makes MRI so, so fast for most sophisticated imaging modality available yet on the other produces greater risk of error than in the world case, the wrong sequence adjustment can completely fail to detect signal from the most gross pathology. Usually a number of sequences is run sequentially with each sequence having a specific diagnostic intent. Imaging is possible on any plane and the received data can be reconstructed in 3-D.

HAZARDS AND RISK REDUCTION

Superficial consequences of entering the human body in a strong magnetic field, to a

rapidly changing magnetic field, and to pulses of RF energy which within the magnetic field excite nuclei, upon which magnetic objects, within the pulse time, heating and the emission of small electrical currents. The prospectively there is now a library of recommendations Codes of Practice and Regulations pertaining specifically to the maximum allowable energy deposition within the patient and possibly within the context of MRI examinations.

While the first concern to perform MRI runs with the technology, there is a responsibility upon all relevant practitioners to investigate themselves, with the latest centre information to MRI and to include those for whom MRI is not appropriate. Requiring practitioners will also reduce the worry of this technology as relevant to them and that every effort should be made to avoid low magnetic dose by ensuring that examinations do not have to be altered because of safety concerns. Explanatory lectures

describing the technology, the safety implications and the practicalities of MRI is available from the Department of Radiology at BSH Medical.

CLINICAL APPLICATION OF MRI

If there is a single characteristic of MRI which makes this exciting so remarkably, and which places it independently ahead of other imaging techniques is in the temporal resolution that can be achieved. Quite simply, this is the ability to discern different tissues and within them pathophysiological changes. In the majority of its clinical applications, MRI is without equal in this achievement.

This has enabled excellent spatial resolution and the ability to perform a wide range of dynamic physiological studies, eg. CSF flow, cerebral vascular perfusion, renal function and a spectrum of cardiovascular dynamics, has been a kind of bonus, this is achieved without the use of ionising radiation — an ability which will no doubt appear those in other imaging fields.



Figure 1. Surgeon General (left), MRB, BNTH (center) and MRB (right). Hogg, MRB, Surgeon General (left), Hogg, MRB, Surgeon General (center), Hogg, MRB, Surgeon General (right).

which have been described by the radiologist's perception of differences in the use of radiations.

MBI was first applied in the study of CNS and in this application it remains the source of continuing discovery with the ability, now, to image neurophysiology which was formerly a clinical diagnosis only. Indeed, it may well open the door for some years that MBI will dominate the therapies in the brain which, although not devoid of therapy, only has its contribution to make in its readily withdrawn clinical diagnosis.

MBI thus found early success in ophthalmology where the imaging of vision — especially the lines — exceeded most other diagnostic techniques and sustained the technical appeal — for MBI at BNPB Hospital soon follows. The many clinical applications of MBI are seen in the volume of a vast library of literature and research data and MBI, ophthalmology at BNPB Hospital have been fortunate enough to spend time at several of the following centres from which the material is emanating. Unfortunately space is not available here to describe at length the individual clinical applications of MBI. Nor would it be feasible to imply that there are no restrictions upon or limitations to the use of MBI. For instance, the data acquisition speeds of an MBI is valuable in many ways and where such movements cannot be readily sustained and regulated by movements related to the pulsation of the retina and to put under within the lower image clarity may be significantly diminished by motion related artefacts. This problem is the subject of constant technological endeavour and software development. It is now usual particularly at Maudsley Hospital to incorporate techniques and at shortening yet further the data acquisition speeds so that motion will have a less disruptive influence on the image. From an administrative point of view, the mobility in its usage supply both locally and remotely and this inevitably implies that access may have to be restricted if the more appropriate clinical use of MBI is to be attained.

MBI AT BNPB HOSPITAL

In 1981 the Department of Radiology initiated an extensive appraisal of MBI at BNPB Hospital. The appraisal for MBI was initially based solely upon the simple criterion representing the clinical acceptance of this technology directly from the point of view of the patient's therapy.

Orthopaedic colleagues in this hospital are amongst some of those orthopaedics and the associated areas and considerations, however, in the Service point of view, with the costs of an MBI scan and in addition to that a substantial annual saving, could be achieved if purely diagnostic orthopaedics was replaced by MBI scanning. This was not the subject of any consultation and in no way, however, the availability and reliability of the technology of orthopaedics. Rather it demonstrated a remarkable physical and spend in time, financial argument for the consideration of a mobility which, whilst it could, rapidly reduce or may even see the end of ophthalmology orthopaedics. There are of course, considerable practical and financial aspects for the technology and it is very much hoped that there will be a revenue programme, report by the BNPB Hospital from outside MBI itself.

For the orthopaedics needed, the hospital has bought a B 5 Tele-diagnosing system from Polar Instruments Limited which, although often based in a widely owned subsidiary of the British General Electric Company. The system is made in Britain, is supported by Britain only, is widely studied and discussed and is probably the machine on the market in the field strength capacity. Some details have been bought five feet overall height about 2.5 metres. The computer system driving the MBI unit are among the most powerful on today's market and include, an-RT, DAC Alpha Health's performance driving the system work station for the system database and display functions. These are supported by Motorola 68000 central processors and ROM-FLUP may from any processors which control the scan and reconstruction hardware. There is also an independent viewing console (TVT) which, with the exception of scan initiation, has the same functionality as the main system console, and even the same image and scan opening display. The TVC has, as well, DAC Alpha computer's multi-Microscopy and related via Ethernet to the main console. Anything will be by itself, and not a standard photographic based copy through a video camera in use major.

It is reasonable to suggest that the introduction of MBI at this hospital has been a milestone in its history. An increasing but sophisticated patient now needs in its purpose field what it is remarkable technology which all results are more welcome to use, it is a great — and much desired — step forward for the hospital and the BNPB.

Operational medicine

Royal Naval Hospital Haslar and Operation OVERLORD



Large 17 ft high ward preparing casualty in one of the districts in which several operating theatres at RNH Haslar

The Royal Naval Hospital Haslar has served for many World War 2 casualties. In June 1944 it was a special arrangement to receive the wounded from the Normandy beaches and hospital work was done there — and was found wanting. This period in history is known, and described in the Journal in 1944 in

Surgeon Captain F. C. Baker is a past member of the Haslar staff in 1944. An illustrated version of his paper is published here as a commemorative of the active workers and members of medical and nursing staff. He was found to have contributed to the journal.

Painstaking and long up of water, it was 100 tons for every hundred and ten tonnes only a few months flying time of German-occupied France. There was no way landing took up in the months pre before D-Day and in the days following the invasion. It is not, frequently, however, the top of the buildings up to 20 a day until that landing was in the Channel. Plans were very simple.

The others, underneath the original building, provided a place for the sick and for the patients who were to be carried — the others being recommended in the ground floor wards — and recommended two modern three table operating tables — one in each of two corners of the building. There were no landward and there was a gas storage place.

Naturally the Hospital had about 1000 beds. Several wards were used in rooms and classrooms for the greatly expanded staff.

During the war years cases treated each year rose from 2000 to a maximum of 10,000

simultaneously. First, routine examinations, as other hospitals, each week, each month was completed on admission and daily thereafter by the medical officer in charge of the ward and a fully trained nurse, showing the number of cases for transfer to the wards and chambers and those with no more than daily examinations. Apart from a programme required in order to keep the staff in position, a small surgical team was, transferred to other hospitals.

RECEPTION STATIONS

Each of the war time casualty reception stations, each with, space for 400 cases and 400 cases, was limited by the lack of the arrival of a ground floor entrance on either side of the hospital. Each was kept equipped and under the charge of an experienced nurse. A small number of the medical staff took charge when available, even, being received. The station was ready at all times with a small nursing staff. There could be fully trained in a few minutes.



Figure 2: Group of medical staff at RNM, Harlow, 1941

Records of casualties were prepared by affixing casualty labels, with an air-liquid design of Red Ticker paper bearing pre-printed history and identification headings, and body numbers. The sequential numbering of these records, repeated with checking all patients out of the reception station allowed the exact number received and their whereabouts to be given at any time. The Red Ticker was kept on a large board surrounding the list of patients and journals at a desk corner.

On arrival the casualty was assessed by a Medical Officer who recorded the diagnosis category (Disputed, Serious or Mild) and orders for immediate treatment and disposal on the Red Ticker. Information was passed to the authorities responsible for forwarding the men of the Marine command but over the radio boats released. Treated surgeons gave names and pre-printed notes. The other treatment was given in the Reception Service.

Boats carried all the medical work and covered waiting cases to their permanent destination. The process was speedy on the occasion during the Normandy period. All casualties were identified on Red Ticker and the registers.

The task of the reception station was to ensure an atmosphere of complete efficiency without the appearance of haste or panic. However great the number of cases, it seemed to proceed too much the pace effect with an atmosphere less on the morale of casualties especially when the efficiency is accompanied by sympathy and a cheerful smile on the part of the female nursing staff. Casualties have usually changed from through water-churning experience and no matter how brave and courageous they appear to be, they are apprehensive and in danger surroundings. The interest of their reception chain tends to impress them favourably or unfavourably and to give them confidence or otherwise in their treatment. On every occasion I was told by apparently 'hard-boiled' patients how much they had appreciated the manner of their reception and how impressed it had been.

REQUISITIONING WARE AND PROVISION OF BLOOD

Medical Officers of the medical and pathology departments issued two requisition forms each on the ground floor adjacent to the largest station and in operating theatre. By evening 5.45 p.m. it was possible to have one more, to serve two patients. Oxygen was laid on to every bed and there was a portable X-ray apparatus in each

one. These MAs also passed the blood bank. The supply was kept up by the daily bringing of volunteers from outside establishments. These transfusions arrangements proved to be much needed and of some great value.

TREATMENT OF BURNS

The old burns and its adjunct ward under the charge of two experienced burners were used for the treatment of burns.

CASUALTY EVACUATION PLAN FOR OPERATION OVERLORD

In early spring of 1944 secret information was received on medical arrangements in prospect with the forthcoming invasion of Europe. Inside the Hospital a role was immediately cast for naval circumstances that it was never anticipated in the marine code alone. EMS scheme for the treatment and disposal of all casualties. All arrangements had to be made under very strict conditions.

In the early Army Medical Services were to provide medical units to provide medical supplies back to the United Kingdom by air land of ship at Port. The choice of a specially equipped Tank Landing Ship (LSTs) containing kit, tools and other supplies. Each could accommodate 150 casualties and was to have three medical officers onboard, preferably a surgeon of delay, a skilled anaesthetist and another well-versed in resuscitation methods. The Royal Navy provided and trained the medical staff for most of the British medically equipped LSTs. These were expected to report to Portsmouth, Gosport and Southampton. The American organisation was to use Southampton and Portland. As French ports became available hospital quarters and then hospital ships would be used in addition.

ORGANISATION FOR TREATMENT OF CASUALTIES IN THE UK

EMA hospitals as arrived at Port. Transit (rail or road) or then including special centres. There was a Port Hospital for transport there being only a small EMS Hospital at the Cottage opposite 50-60 beds at Bournemouth. Port Hospital staff would be treated only those cases as extremely wounded that they could not be transferred further inland. Five hundred of the Hospital's beds were reserved for the purpose. As my surgical consultants with experience in North Africa, Sicily and Italy were to take the cases at the landing place, they must understand had to be transferred further inland immediately. It had been ordered at to meet.

of the point of medical officers is reserved for survival in LST's.

FINAL PREPARATIONS

The first casualties were expected to arrive about 24 hours after the repatriation started and it was, therefore, clear, while it would be a prolonged affair, the work would be over in two days.

Elements of the casualties to be repatriated ranged up to a maximum of 60 very serious cases every two hours. Each member could not be asked much and it was hoped that they would not be reached. We were not to be informed of the date of 15 day in advance. In a week or so before we commenced that it was likely to occur all possible patients were discharged for EMS was to the North of Ireland and thereafter only casualties were admitted.

During the two progresses everywhere were very close ones, such as the commencing of even the smallest wind passing likely to be used for rain, causing the breaking of huge waves and danger at Stokes Bay. Now known to be part of the arched harbour, and the arrival, parking and embarkation of thousands of tanks, and other vehicles. The air was filled by day and night with the roaring, rattle and rumble of an increasing number of Allied aircraft. The reason behind the Hospital continued dropping of all work. Tanks occupied the roads for many miles and the noise of their arrival at getting goods near the back of the Hospital was almost constant.

INVASION BEGINS

On the first morning that the experience had started on land it was marked in the morning morning news. The war had continued and in the afternoon the hospital cases were increased and the number of medical work for surgical and other officers increased. It was necessary to keep going, but it was necessary to have smaller, as a rule, jobs, work became with running water as two weeks before and for some medical work.

The first casualties arrived early on 7 June and the experience was not a full week, very serious casualties arriving in hospital in fairly steady numbers for 72 hours. The first party made up a deficiency in casualty transport, with great enthusiasm and sympathy for the patients.

We were able to deal with the numbers received in the first few days without any really large accumulation of patients, increasing operations. Both surgical and general surgery

continued operated throughout the first few nights. After the first 72 hours there was a lull during which all cases were made up. After the casualties arrived nearly all cases in night as the covers left France in the morning and then had to proceed at short speed because of coming darkness.

FACILITIES FOR RELATIVES OF CASUALTIES

Governments arrangements wanted anyone travelling by train to visit relatives in Hospital that they would be subject to even more delays and uncertainties than visit. It was not thought that the demand would have coming from the desperately worried relatives. The Red Cross and Women's Voluntary Service had arrangements to visit them in the nearest possible transport and had arrangements in private hotels.

WIND DOWN

It was beyond possible to reduce the number of operating hours and after three days finally to go home when off work — no more work the first was allowed. The wounded arriving had had more operations in France and although they were gradually removed as they were in made better conditions than those reported earlier. The clearing of many of our early cases, was removed on land from the beaches and some had had for several days before they were picked up. As the work of fighting in the Falaise gap, where the enemy suffered terrible punishment, we received German prisoners who had long and hard days. Many of them had gas gangrene.

The use of the Hospital was connected with the Normandy landing which led to the end of August — considerably longer than the two days, seriously supported in the beginning. The total number of casualties received in that period was 1,500. Throughout the three weeks period both operating theatres were on the night the day and night was in part for most of the night.

Our patients were truly international and of all Service, including of British and Empire Forces, American, Australian, Fighting, Portuguese, Canadian and Polish. We also received two kinds, French civilians, one of whom was very enthusiastic, but the other was not so for initially disposed towards the Allies, complaining that the Germans had been chased and the British killed. Many prisoners of war were received and treated just as the other soldiers were.

SUCCESSFUL JOINT EFFORT

I was disappointed at the time to avoid any of the many sources of lectures and lecture services or motivational materials that can so easily come to you only to find that the whole business was in complicated tangles both in regards the system of payments including promoters of sale, and cooperation with the Active and Inactive of all systems.

Editor's Note: The original paper had no illustrations. There didn't make a mention in the only photo people of this period (as the original picture) and for these I am indebted to the Chief in Photography and Radio Room Center at 1945 Boston and to the James M. Shaw.

Begins Lecture and Bishop 25 FEB 1946 was then taken to in case of the photograph. Recently he told me that on the night of 2 June he and Bishop Lecture that other person, started the show in it for November and then they had from 12 May, the very report on the Bishop's Blue dress? This was the only

before the point of 1946 was to show nothing for the material over the following months. It's important having gone their opinion was from Bishop that James' efforts were then more well liked in Boston and I am pleased to acknowledge that assistance in doing up these shows in Figure 3 and 4.

I will make my information about these the next one of the photographs and on the site of the Emergency Hospital in Atlantic contained in the paper. It contains many more photographs of Royal Medical services including 1st or 2nd class, Bishop and the re-located Royal Medical School in Boston. It could be greatly improved if there could be done to the Journal. All photographs in this material after copying.

Further interest in details of the contribution the Royal Medical Personnel Service made in the medical emergency from 12 May was reported in 1950/51 (Vol. 2) 1951 1951. A complete more substantial note of the work 1946-49 in Boston with mention of cooperation with capacities from the end of 1949. It is in found in 1950/51 1951 1951 1951.

THE PRIDE OF THE FLEET IS AT STAKE

There are 11 in the fleet
Now 11 there is more to
give. 11 in the fleet
There are more to give
There are more to give
There are more to give
There are more to give
There are more to give
There are more to give

No other man has
to make a man
to make a man
to make a man
to make a man
to make a man
to make a man
to make a man



And there is more
to give. 11 in the fleet
There are more to give
There are more to give
There are more to give
There are more to give
There are more to give
There are more to give

No other man has
to make a man
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Van Dungle

CONSIDER YOUR PERSONAL TRAILER

Trailer for 1951 Model 11. 11 in the fleet
Trailer for 1951 Model 11. 11 in the fleet
Trailer for 1951 Model 11. 11 in the fleet
Trailer for 1951 Model 11. 11 in the fleet

Clinical management

Diagnosis, progression, prognostic indication and classification of periodontal disease (Part 2)

C R Pritchard

Abstract

In the second part of this review, the current status of diagnosis will be described, outlining three aetiological and modifying factors. The group of aetiological factors of the gingiva is grouped according to the classification accepted by the World Workshop on Periodontics (1993). In terms of the relationship between gingivitis and systemic modifying factors, it is a response that all general dental practitioners have a sound knowledge of oral symptoms and oral pathology in order that patients exhibiting gingivitis and the gingivitis or signs of disease, may be referred to the appropriate dental or medical professional/department. Furthermore, it is highly desirable that general medical practitioners develop adequate experience in oral examination and are able to recognize diseases from the dental and specialist

aspects, and with gingivitis may also be modified by other systemic factors including smoking, smoking related disorders and nutritional lack of the modifiers of the gingivitis is noted as the presence of plaque related gingivitis which means oral conditions are described. However, it should not be forgotten that oral symptoms of disease may progress which is described separately, the underlying cause of gingivitis is the accumulation of bacterial plaque.

GINGIVITIS

Non-specific plaque associated gingivitis defined as inflammation limited to the gingiva¹ occurs within 21 days following the removal of plaque control measures². It is characterized by the clinical signs of gingival redness, swelling, bleeding and increased tenderness. The development of gingivitis appears related to both an increase in plaque mass and a change in the proportions of organisms present³. These organisms which have been employed in the study of gingivitis include *Streptococcus* spp., *Lactobacillus* spp., *Staphylococcus* spp., *Pseudomonas aeruginosa*, *Proteobacteria* *parvula*, *Campylobacter* spp., *Porphyromonas* spp. and *Peptostreptococcus* spp.⁴

Research findings indicate that it is possible for gingivitis to remain stable⁵⁻⁷. Such a stable condition enables the diagnosis of an early or established lesion as described by Page and Schroeder⁸. Currently the available clinical tests quantify depth, bleeding on probing, microleakage levels, and radiographic findings produce further information purely. Therefore it may be seen to question over the past periodical screening techniques and look for new methods of progressive diagnosis. However, the question of bleeding on probing is a reliable indicator

BACKGROUND

As outlined in the first part of this paper, gingivitis is caused by bacterial plaque accumulation. Dental bacterial plaque is a complex structure comprising many diverse bacterial types, salivary glycoproteins, and a carbohydrate matrix produced by the bacteria. This complex structure appears as a plaque.

Within this composition, the bacteria themselves have available within the oral cavity and produce by products some of which directly damage the gingival tissues, some are involved in the modification of the host defence mechanisms and some act as host factors that cause bacteria within the dental plaque reservoirs. The host response to this accumulation of bacterial plaque leads

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of improved health is indicated by a reduction in gingival inflammation, repair of gingival connective tissue, pocket depth reduction and a rise in clinical attachment level.¹⁻³ This therefore indicates that the receding of bleeding on probing has more or less been monitoring of periodontal disease pathology, therapy, but it must be remembered that the design and use of the probe, probing force, implication and, ideally, the examiner should remain unchanged for all consecutive measurements if the results of such examination are to be comparable.⁴⁻⁷ Variations in probe, time, depth, diameter, implication or probing force will alter the recorded depth, again only and therefore force may result in bleeding due to trauma rather than bleeding on *florid* probing. It is for this reason that constant pressure probes using fine parallel steel and probing wires should be used when such measurements are used in scientific research.

Although established lesions may remain stable for long periods, lesions which demonstrate destructive activity may do so only for a short time, followed by a period of dormancy.⁸⁻¹¹ This unpredictable behaviour of periodontal lesions makes the decision to treat or not to treat difficult for the clinician.¹² Furthermore the pathobiology of various periodontal processes including bleeding on probing and the clinical course of suppuration appears not to offer suitable guidance.¹³⁻¹⁶ The interplay between these clinical parameters and disease activity appears to be weak, therefore new methods and more advanced technologies are required to make the diagnostic process and prognosis indicators more reliable.

Recent monitoring alternative gingivitis (ANUG) defined as an acute recurrent gingival infection of complex aetiology, distinguished by severity of the type of the gingival papillae, spontaneous bleeding and pain.¹⁷ The infection has been described as bio-geographical in nature. The clinical picture is not an inflammation, nor is it suppurative papillitis with crusting and the presence of a grey slough covering painful ulcers, haemolysis or necrotic signs. The spontaneous bleeding and gingival discomfort frequently make early diagnosis of an impossible, however there is no evidence for including pyrexia or malaise as a symptom. Indeed toxic such symptoms occur the patient should be examined carefully for collagenolytic underlying systemic disease.¹⁸ There has been much support for including fever¹⁹⁻²¹ as a possible aetiological factor associated with chronic

osteomyelitis.²² Fever oral hygiene²³ has been quoted as a further important factor in ANUG. Smoking too, has been implicated in the complex aetiology of this condition.

Sub- and intra-epithelial influenced gingivitis has been defined as gingivitis associated with horizontal changes.²⁴ The gingival response to plaque accumulation appears to be modified by factors such as puberty, pregnancy and oral, general and systemic disease. Furthermore Korman and Loeche²⁵ demonstrated that subgingival growth of *Porphyromonas* species is enhanced in patients where there is an elevated level of serum glucose. It was shown that horizontal area is elevated in *Porphyromonas*, *Propionimicrobium* and *Prevotella*, have a significant improvement for elevated malodour. The clinical appearance of such a gingivitis includes hyperplasticity, necrosis of gingival inflammation in response to a mild plaque accumulation. The lesion may extend a fixed erythema with severe odour, altered gingival contour, spontaneous bleeding, and in some cases, a moderate inflammatory induced gingival tissue enlargement described as a gingivitis granuloma or pregnancy epulis. Once the horizontal levels return to normal at the time of pregnancy epulis, the epulis will shrink and following good plaque control the lesion may resolve entirely.

Medication influenced gingivitis may result from the use of specific medication which influences the gingival environment and its present with alterations in gingival contour making plaque control difficult (prolonging to severe periodontal inflammation). Such drugs include Phenytoin,²⁶⁻²⁸ Cytosporin,²⁹⁻³¹ Nidaplan,³²⁻³⁴ Valproate,³⁵ Vincamine³⁶ and Diltiazem.³⁷ The administration of Phenytoin in the presence of gingival inflammation may lead to magnification of bleeding with extension of gingival enlargement beginning at the interdental papillae. The cellular changes of the fibroblasts leads to an increased production of non collagenous connective tissue with a consequent reduction in the overall proportion of collagen in the involved gingival tissue. These cellular effects may be accelerated by ascorbinic acid and ascorbic acid deficiency to collagen loss and extracellular collagen trapped within spaces which may be affected by the use of this group of drugs which then promote gingival enlargement in the presence of gingivitis.³⁸ Cytosporin is an immunosuppressive drug frequently used in prophylactic therapy for postoperative allograft rejection. Nidaplan is

a redness (flushed block), administered to the treatment of various cardiac arrhythmias and as an antiemetic for motion sickness. Vasodilation occurs in the overexposed gingival tissue which leads to gingival bleeding. Patients should undergo gingival debridement for bleeding for systemic reasons. Eubacter 9000 may be used in the control of gingivitis. However, there is only one case of Eubacter 9000-induced gingivitis reported in the literature to date.²² Lactone cases of Gingivitis and Desquamative gingivitis are relatively rare.²³⁻²⁵ The treatment of drug-induced gingival inflammation may include a change of drug or alteration of dosage, tooth correction, gingivectomy by electrocautery or laser techniques accompanied by meticulous plaque control and thorough oral hygiene procedures.²⁶⁻²⁸ Recent reports highlight the effectiveness of thorough debridement and high standards of plaque control.²⁹ There remains much controversy over the relative importance of levels of plaque control and the strength of a causal plasma level of each drug implicated in gingival inflammation.

Desquamative gingivitis is a rare specific term denoting chronic diffuse inflammation of the gingiva with atrophy of the surface epithelium. This is a descriptive term rather than a diagnosis. The term is usually collected retrospectively on use of the treatment including: Rongit-Monodon, Monodon, Propylidone, Propylidone, valproate, Penicillin and Eubacter 9000.³⁰⁻³² In each of these conditions the formation of vesicles appears, to be the equivalent of desquamation. Both Rongit-Monodon, Monodon, Propylidone and Propylidone valproate are not treatment diseases with their antibodies found in the tissues at different levels. These diseases have more serious medical implications and therefore it is of paramount importance that such lesions are correctly diagnosed as early as possible and appropriate referral arranged. In many cases the lesions of conditions presenting as Desquamative Gingivitis may affect other mucosal surfaces, a gingivectomy important to obtain a full history from such patients, in order to identify those suffering from more serious and widespread disease. Immunohistochemical staining of desquamative lesions plays an important role in diagnosis.

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Distant haemorrhagic effects in intra-arterial Tissue Plasminogen Activator — The effect of a bolus dose

N. P. J. Cropps and A. S. Ward

Abstract

Cropps and Ward reported four patients who developed severe distal haemorrhagic complications while undergoing percutaneous arterial thrombolysis with intracoronary (i.c.) tissue plasminogen activator (tPA). The thrombolysis regimen comprised a 50 mg bolus of tPA, followed by a continuous infusion of 1 mg/hr.

Five additional cases of haemorrhage in the coronary artery bed were also encountered in a group of 25 patients receiving the bolus intracoronary tPA regimen. The high haemorrhagic rate (32%) is a significant drawback of this thrombolytic protocol.

INTRODUCTION

In 1988-1989, the intra-arterial infusion of streptokinase agents has been replaced as an alternative approach to support acute thrombolysis in the coronary circulation with both tissue-type and bovine graft occlusion. Additionally, the continuous infusion of streptokinase and anistreplase have become established as the standard of coronary artery occlusion and pulmonary embolism. Initial experience with both streptokinase and anistreplase showed that, in some cases, profound systemic depletion of fibrinogen was seen within resulting risk of haemorrhagic complications. Tissue plasminogen activator (tPA) was thought to offer hope in reducing this risk, principally because of its relative lack of fibrinolytic specificity for the fibrin-bound form, rather than fibrin in the systemic circulation.

The tissue plasminogen activator (tPA) has now been extensively used in various acute arterial thrombolysis with considerable variation in dosing regimens. Because of its relative fibrin specificity, tPA was thought to offer the potential for lysing fibrin clots locally without causing systemic hypofibrinogenemia. Any tPA which does enter into the systemic circulation is said to be rapidly and almost by alpha 2 macroglobulin, thereby reducing the effect on systemic fibrinogen levels.

Several cases have reported concerning results in terms of limb reperfusion and salvage using a continuous infusion technique (1-3, 5). Limb ischaemia followed by continuous infusion is known to occur even in the case of profibrinolytic and possibly also in the case of tPA. "We have used the tPA bolus infusion combination in 15 patients. 10 with minor injury and four with major graft occlusion." As reported, limb was salvaged in 73% of cases with a mean time to reperfusion of 14 hours (range 1-24). However, serious haemorrhagic complications only arose in four patients. Bleeding occurred in the catheter entry site but more importantly, four cases of serious distant haemorrhage were encountered. This paper reports details of the latter four cases, to illustrate the potentially devastating nature of distant haemorrhages during thrombolysis.

Case 1

A 55 year old man was treated for left lower limb vein pain by femoropopliteal polytetrafluoroethylene graft (V.L. Gore and Associates Inc., Waverly MA) insertion. In June 1990 a leaking thoracic aneurysm was repaired with a collagen impregnated bovine Dacron artery graft (Medtronic

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Medicine Unit, Oxford (UK). Three months after discharge the developed ischaemia of left leg (not possible to Markley) of the left equine graft.

In December 1990 through a right lateral aortic puncture, a bolus of 20 mg t-PA was given over 10 minutes into the femoral, and an infusion of 1 mg t-PA per hour commenced with 200 ml/hr per hour of heparin. The heparin labon concentration was 14.6 g/dl. As heparin levels after starting the infusion, partial graft occlusion was noted. Twenty six hours after commencing the heparin, haemoptysis was observed and the t-PA infusion was stopped. Haematological investigation at that time showed a reduction in haemoglobin concentration to 16.0 g/dl. The fibrinogen level was 1.25 g/l (normal 1.9-4.0 g/l). The prothrombin time (PT) 18.0 s, thrombin time (TT) 36.6 s and kaolin cephalin clotting time (KCCT) 54.7 s (all markedly prolonged).

Four units of blood were transfused, a thoracic computer tomogram (CT) was obtained following intravenous administration of 200 ml of iodinated contrast 300. Macro Pharmaceuticals Ltd, Allen UK) at 1 ml/min. Contrast was seen in aorta and around the previously placed thoracic aortic graft. Density of contrast was maximal around the body of the graft indicating a haemorrhagic dissection. There was no evidence of perigraft contrast collection another possibility of distal aortic valve leak and no evidence of false aneurysm. The haemoptysis was thought to have resulted in a retrograde extension of the perigraft haemorrhage into the adjacent lung due to the high graft equine lung adhesion. Five days later the haemoptysis had ceased and repeat CT scanning showed no further graft extension. A retrograde bronchoscopy was normal. The leg remained ischaemic and a repeat femoropopliteal bypass graft was successful in revascularizing the leg.

Case 2

A previously fit 51 year old man was admitted for the investigation and treatment of right calf and thigh claudication at a walking distance of 600 metres. Angiography through a femoral cutaneous femoral puncture demonstrated a right internal iliac stenosis which was angioplastied. Sixteen hours after the angioplasty was reintroduced into the superficial femoral artery (SFA). In view of this he was given 20 mg t-PA over the SFA over forty minutes followed by an infusion of 1 mg/hr t-PA in addition to 200 ml/hr heparin. Fibrinogen concentration prior to t-PA injection was 2.7 g/l.

On returning to the ward, the patient became confused and developed progressively decreased neurological signs. The t-PA infusion was stopped and claudication signs showed the fibrinogen concentration 1.25 g/l, PT 16.4 s and TT > 100 s, KCCT 28.0 s. A CT brain scan showed a large focus over haemorrhage which was not attributable to neurological examination. The patient died comatose and died 48 hours later.

Case 3

A 51 year old female patient was admitted with a two week history of left arm claudication and paraesthesia in the hand. Angiography showed a 90% post-revascular stenosis of the left subclavian artery, which was angioplastied to 7 mm. A clotting screen at that time showed PT to be 13.3 s, TT to be 14.0 s and KCCT 34.6 seconds (slightly short).

The left arm symptoms failed to resolve and she was returned for angiography 24 hours later which now showed distal occlusion of the axillary artery in the brachial artery bifurcation. An intra-arterial bolus of 20 mg t-PA was given and a t-PA infusion of 1 mg per hour commenced with 200 ml/hr heparin and the thrombin infusion.

Eight hours later, angiography showed lysis of the thrombus in the brachial artery bifurcation although the artery was not completely clear. At twenty hours after starting treatment the developed signs of an increasing right hemiparesis and the t-PA was stopped. A CT brain scan demonstrated a large left parietal haemorrhage. Clotting time showed a fibrinogen concentration of 1.84 g/l, PT 16.5 s, TT 45.0 s and a KCCT of 44.0 s. The haemorrhage was subsequently evacuated neurosurgically following a further week of a slow partial recovery. Left arm claudication symptoms persist but are not severe. A hyperfibrinolytic factor has been subsequently identified.

Case 4

An 80 year old man was admitted to an emergency with numbness of right lower limb and pain. The clinical diagnosis was of acute superficial femoral artery (SFA) thrombosis and he underwent catheter angioplasty which confirmed an SFA occlusion from 8 cm to 10 cm. A 20-mg bolus of t-PA was given into the clot and an infusion of 1 mg/hr t-PA with 200 ml/hr heparin commenced.

Eleven hours later he had a one day haemorrhage (no gastro-intestinal symptoms had been recorded, no direct questioning). A coagulation screen showed, fibrinogen

concentration 2.2 g/l, TT 14.8 s; PT 17.5 s, and APTT 42.1 s. Two units of whole blood were transfused and competency upon gastrointestinal endoscopy undertaken, which demonstrated a paper reflecting a large laceration with the adherent in its base. The intubation and deployment were otherwise normal. After other endoscopies were denied, laparotomy was later performed showing complete closure of the wound and an underlying HPA abscess which was encapsulated and free PA infection demonstrated. Subsequent progress was unremarkable with no further evidence of postoperative bleeding and complete restoration of lower limb perfusion.

DISCUSSION

Successful thrombolysis has been reported in between 85 and 100% of cases following t-PA infusion.¹ Dose rates of 1 t-PA have been of the order of 0.5 to 1.0 mg/kg in most UK series,² though infusion doses of 30 mg/hr have been employed elsewhere in Europe³ and 0.1 mg/kg/hr in the United States of America.⁴ Evidence is increasing in haemorrhagic complications. One of the factors which confer lower dose t-PA infusions equivalent to the length of time required to achieve thrombolysis with average rates of 22 to 37 hours being reported.⁵ In an attempt to speed lysis, bolus loading has been advocated using conventional and single bolus catheter systems and has been shown in the case of other thrombolytic agents⁶ to shorten lysis times. Bolus doses of 15 mg over 30 minutes⁷ and 50 minutes⁸ have been successfully employed, again without increased haemorrhagic complications.

Higher infusion rates than those of more general thrombolysis are given in cardiac thrombolysis, where the first reported paucity rates have used 15 mg given immediately followed by 50 mg in the first 30 minutes and a further 50 mg after a further hour.⁹ While there may be a difference between intravenous and intra-arterial administration, our major haemorrhages have all been systemic and large infarction, does reach the coronary circulation without an opportunity to bind to a fibrin clot.

Apart from the use of large bolus doses, the constant infusion of doses similar to 1 mg/hr t-PA have been routinely reported in the UK. Doses in the range 0.1-1.5 mg/hr¹⁰ and 0.5-1.0 mg/hr¹¹ have both been used on several series without an associated increase in haemorrhagic complications.

The prospect of speedier thrombolysis is attractive for the following reasons. Firstly

intracranial thrombolysis is dependent on radiological parameters and therefore any delay may well reduce both of these for subsequent applications. Secondly shorter times under treatment will reduce the risk of intracerebral monitoring and nursing requirements and reduce the period of patient discomfort. Thirdly, early intracranial thrombolysis is currently restricted to those cases where the degree of limb ischaemia does not demand immediate revascularization. Faster thrombolysis may bring a greater number of cases within the therapeutic reach, without compromising clinical outcome.

After speed of thrombolysis, the dominant concern with level of haemorrhagic risk often emerges. Low dose regimens, infusions versus relatively safe, appear to be being steadily favoured over the rest.¹²⁻¹⁴ Doses with higher dose infusions the risk of serious bleeding is only of the order of 5% or less.^{15,16} And where bleeding has been documented most cases have been of the nature early site with only isolated examples of bleeding in remote sites. The high incidence of bleeding in these areas seems to be specifically related to prior bolus loading. Others have also reported a high incidence in serious bleeding after a t-PA infusion has been preceded by bolus loading.¹⁷

The risk of bleeding is difficult to predict from laboratory clotting studies. A plasma fibrinogen concentration less than 1 g/l has been identified as a level below which most serious complications occurred.¹⁸ However all of our patients currently reported had a fibrinogen concentration greater than this level and others have also reported haemorrhage in the absence of significant hypofibrinogenemia.¹⁹ For this reason it is likely that the post haemorrhagic administration of replacement clotting factors would have been of little clinical benefit. Furthermore, because of the short plasma half-life of activating t-PA at 3-9 minutes, one fibrinolytic agent can also continue to have been beneficial in the management of our bleeding complications.

A recent study of coronary thrombolysis has shown that the level of fibrin degradation products (FDPs) may be more relevant to the risk of bleeding than fibrinogen.²⁰ FDPs are an end product again²¹ and so intracardiac or distal site right²² as well as following such a PA, present in the systemic circulation from a continued infusion - all of which increases the risk of serious systemic haemorrhage. More recently it has been shown in non-thrombotic FDPs are also in potentiating t-PA, reduced

thrombolytic for leading to the 1 PA molecule.²² If these PLAs are not the primary agent against there is no doubt the bleeding is a toxic way related to the ongoing fibrinolytic process, where this complication was not seen in case respondents.

CONCLUSIONS

Although the administration of a bolus dose of intravenous t-PA, prior to the maintenance of a steady infusion of the same agent may more effectively attract in patients of lower fibrin time, the risk of serious adverse hemorrhage is more demonstrated in these four patients because of the potentially severe nature of thrombolytic-related hemorrhage. It is essential that all possible contraindications for thrombolytic are entirely ruled out and it is important to recognize that the risk of hemorrhagic complications exists even if no positive contraindications to bleed.

In all cases of serious hemorrhage, at least partial thrombolytic had occurred leading weight to the theory that the products of thrombolytic are in part responsible. At the present time, the appropriate thrombolytic agent and its method of administration have yet to be defined but on this evidence, it is reasonable to recommend bolus dose t-PA administration followed by continuous low dose infusion.

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Cardiac diseases of young people. I: Longterm management of Wolff-Parkinson-White syndrome

A Ritchie and M L Cowley

Abstract

When symptoms occur in the presence of asymptomatic pre-excitation cardiac interventions should be given to the patient's long term management. Typical long term therapeutic options may be defined as a potential cure for people with extra sites or pathways in those at high risk of life threatening arrhythmias. In certain cases, ablation may be justified even when symptoms are minor and there are no other proposed factors. Options for treatment are discussed and classified by risk-rates.

INTRODUCTION

Wolff-Parkinson-White syndrome (WPW) was first described in 1930 by Cohen and Rosen¹ and again in 1936 by Wolff, Parkinson and White.² It is characterized by the presence of one or more accessory extra ventricular pathways resulting in ventricular pre-excitation and symptomatic tachycardias. The characteristic surface electrocardiogram shows the kind of a shortened PR interval, delta wave and widening of the QRS complex caused by the addition of the delta wave as it. The first pre-excitation is explained by the rapid electrocardiographic findings are seen in 1-3 per 1000 ECGRs - the majority of which are 18 males.

Symptoms if they develop, usually appear in the second or third decade of life, although up

to 50% of people with typical electrocardiographic findings may exhibit no symptoms. In the transition to clinical morbidity may result from arrhythmias, in particular or ventricular tachycardias and ventricular fibrillation. Typical symptoms include palpitations, chest discomfort, dyspnoea, dizziness, presyncope and syncope. Uncommonly, acute fibrillation may develop, even ventricular fibrillation resulting in the sudden death of approximately 0.1% of patients per year of whom 10% were previously asymptomatic.³

The longterm management of patients with the electrocardiographic findings of WPW is aimed at either identifying programs to controlling symptoms and therefore a decrease in morbidity and thus should be directed with this in mind.

We report two cases of WPW who were treated along with cardiac ablation in case 1 the indication was for control of symptoms not responding to drug therapy and in case 2 for control of symptoms and the presence of pre-excitation atrial fibrillation.

Case 1

A 21 year old university presented in October 1989 to a cardiac hospital complaining of a one hour history of rapid regular palpitations associated with chest discomfort of breath and light-headedness. A twelve lead electrocardiogram (ECG) revealed a narrow complex tachycardia (Figure 1). He was considered to be in sinus rhythm with rapid sinus tachycardia (RST) chest, rapid sinus waves and narrow complex tachycardia having failed. Subsequent ECG showed

See page 31, previous section for a further report of the case. Support: Christopher Cowley, B. A. Consultant, Cardiology, Northcliffe, the currently associated in Royal Free Hospital, Plymouth.

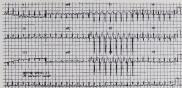


Figure 1

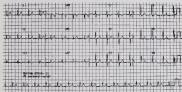


Figure 2

analysis of ventricular pre-excitation was likely via a fast posterior left bundle branch pathway (Figure 2). He was treated long-term with verapamil and antiarrhythmic agents including amiodarone, flecainide and sotalolol. Despite this he continued to have recurrent tachycardia and required chemical and electrical cardioversion on six further occasions between 1985 and June 1990. In June 1990, an arrhythmia electrophysiological study revealed a bypass tract (anterior) and retrograde effective refractory period of 230 milliseconds (ms) and a maximum pre-excit

ED interval of 260 ms during induced atrial fibrillation. He was referred and accepted for coronary pathway radiofrequency ablation successfully carried out at St George's Hospital, London in September 1992. He remains well off all medications and his post-ablation ECG is normal.

Case 2

In September 1990 a seventeen-year-old serviceman was referred to Medical Clinicians complaining of recurrent short lived rapid

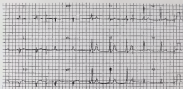


Figure 3

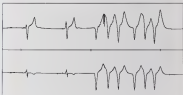


Figure 4

regular palpitations for one year. He described one episode of pre-syncope 8 months previously. ECG revealed paroxysmal tachycardia (Figure 3). A 24 hour ambulatory ECG revealed episodes of tachycardia, tachycardia and asystole of asymptomatic paroxysmal atrial fibrillation (Figure 4). He was treated with digoxin 250 micrograms twice daily and remained asymptomatic until October 1990 when he had a syncope episode preceded by chest

pain and palpitations. On arrival at hospital he was asystolic and in coma. Atrial fibrilla was related surgically for further investigation and accessory pathway radiofrequency ablation. Electrophysiological studies during sinus rhythm revealed two types of tachycardia originating on the left and the other on the left free wall. Both were successfully ablated without complication. He remains well off medication and his ECG is normal.

DISCUSSION

The incidence of sudden death in asymptomatic individuals with structural pre-excitation is very low. Two studies of 15 and 113 WPW patients followed for mean periods of 4.3 and 11.4 years respectively reported no deaths in the asymptomatic group.^{1,2} This would suggest that asymptomatic individuals require no specific test suite but should be advised to seek medical advice if symptoms develop.

Verapamil fibrillation in WPW results from rapid ventricular stimulation via an accessory pathway secondary to atrial fibrillation. Electro-physiological studies, comparing subjects with WPW who have suffered ventricular fibrillation with those who have not, suggest that asymptomatic pre-excited RR sustained during induced atrial fibrillation of less than 240 milliseconds is a transient and specific marker for the risk of ventricular fibrillation.¹⁰ However, because the incidence of sudden death in a population with WPW is very low, the positive predictive value of this test will also be low — of patients who have a response recorded RR interval of 230 msec or less, only 5.6% will suffer sudden death over 14 years of follow up. Other risk factors outside the presence of multiple accessory pathways and a history of both atrial fibrillation and pre-excitation polymorphic tachycardia (historically the occurrence of syncope in WPW has been reported not to identify a risk of sudden death) although altered, require only quickly the antiarrhythmic intervention on the basis of their symptoms alone.

Initial management of the majority of patients with WPW requires drug therapy. This is in part due to the limited availability of catheter ablation but this is likely to change in the future. Some authorities suggest that the choice of antiarrhythmic should be guided by electrophysiological (EP) studies. This study, not in the past in the UK, possibly due in part to the low availability of this investigation. The principle of prophylactic drug therapy is the prolongation of conduction time in refractory period at both of a part of the pathway must be the tachycardia thereby providing a refractory period against arrhythmias such as. Premature and pre-excitation are affected in the long term preventing 10-90% of AV re-entrant tachycardia in approximately 50% of the patients and ventricular response during atrial fibrillation.¹¹ Similar results have been reported with long-term cardiac prophylaxis.¹² Amiodarone is also

effective, but its potential side effects related to not to second line therapy and is unsuitable for long term use in young people. In general, despite the positive AV node conduction or reduce accessory pathway re-entrances or both are, prophylaxis of ventricular fibrillation during episodes of atrial fibrillation by lowering myocardial accessory pathway conduction and should be avoided. This includes digitalis preparations and verapamil. The long-term use of antiarrhythmic therapy may result in a pro-arrhythmic effect; poor compliance may be pre-arrhythmic and indeed has been reported to certain occupational groups such as pilots and divers.

Ablation of accessory bundle conducting tissue often, the possibility of death for individuals in whom drug therapy fails to control symptoms is not tolerated or produce restrictions on employment. Accessory pathways were originally interrupted surgically in open thoracotomy. The repeated approach usually described by 'bushy' was interrupted by an endocatheter procedure.¹ Successful EP mapping is performed to locate the ventricular and atrial segments of the pathway which is either cauterized and destroyed or ablated with cryotherapy via an ablation under endocatheterization system. Success rates of approximately 100% with recurrence rates of 2-3.3% have been reported in recent years.¹³ Complications may now being mainly those of open heart surgery including air embolism mortality of the order of 0.0-0.5%.

In 1985, high energy DC shock, delivered between a catheter and reference electrode was used to interrupt AV conduction in patients with accessory ventricular pathways¹⁴ and was thereafter used to applied to patients with WPW. This required a closed circuit procedure for ablation of accessory pathway, incorporating interventions and mechanical approaches. Although the surface electrocardiogram may indicate the presence of the accessory pathway(s), intracardiac electrograms can suggest or precisely localize areas of pre-excitation and accessory pathway pathways is accurately direct the tip of the catheter electrode along intracardiac EP mapping techniques. When it is successfully ablated 238 of 294 (81%) accessory pathways with no recurrence of pre-excitation tachycardia over a follow up period of 1-64 months.¹⁵ The disadvantage of DC ablation is that the energy release cannot be adequately controlled thus leading damage to adjacent areas in the heart and necessitating general anaesthesia

ventricular pacemaker function. Complications are reported to be infrequent but serious including AV block, cardiac perforation, endocarditis, shock, coronary artery anastomosis and late onset myocardial infarction.^{1-3, 5-7, 9}

The first successful ablation of an accessory pathway in humans with radiofrequency (RF) energy was reported in 1977.¹⁰ With technical refinement it has become widely used and appears to be the best available catheter procedure for WPW in the paroxysmal. RF energy is generated at a catheter tip by a high frequency alternating current in the range 0.5-1 MHz. This results in heating and coagulation of myocardial tissue in contact with the tip. Once located the accessory pathway a ablated within 30 seconds of onset of a discharge manifested by the disappearance of pre-excitation on the electrocardiogram. The lesion produced are discrete and their size may be controlled by varying the amount of energy delivered. Surrounding tissue damage is prevented by reflux of continuous fluoroprotectant is minimal. An AC current does not produce neuromuscular stimulation, prevent coagulation or act as a rapid thermal large area involving RF ablation of bypass tracts in all locations have reported success rates consistently greater than 90% with low rates of serious complications (2.4%).¹¹ Complications included AV block during unperforated pathway ablation, pericarditis/empyema, atrial fibrillation and cerebral artery problems. In one patient¹² a latent myocardial infarction resulted from a left coronary artery occlusion probably secondary to incorrect placement of the RF catheter in the left coronary artery. There have been no published reports of death during RF ablation. Reversal of accessory pathway conduction occurs in up to 12% of successful procedures, as noted in the position of the catheter and a repeat likely if multiple pathways are involved.¹³ The success rate for eliminating these pathways is similar to that for primary RF ablation¹⁴ and there are no current reports of second recurrences.

Currently major drawbacks of RF catheter ablation is the highly variable procedure time which ranges from 1 to 12 hours,¹⁵⁻¹⁷ the average duration remaining high due to a minority of difficult cases. Success depends on good mapping skills, as often proven correct at the catheter tip.¹⁸ Development of catheter design to allow temperature monitoring of the tip and use of direct power sources such as microwave energy may improve procedure time.¹⁹ While

research continues, the emphasis on the efficiency of mapping remains the use of a single catheter for mapping and ablation in cases of manifest pre-excitation diagnosed with the need for a diagnostic study and can shorten the procedure.²⁰

In both the reported cases the individuals were referred to full study in a general cardiac consultation followed by pre and intra study. The technique was the applied in these patients was proven to be an easy technique and a normal resting ECG was seen, rhythm. The observations, occur in individuals in certain occupational groups, whose employment involving high speed action but who after constant training and experience develop symptoms related to a congested way and then be rendered unable to carry out their special duties, as pilots and divers. The closed chest aspect of radiofrequency ablation, as high cardiac risk and low morbidity would imply, such people would be concerned, even with minor operations, and to be treated without full myocardial risk it would however be difficult to justify treatment in an asymptomatic individual in early career operations.

CONCLUSION

The presence of the WPW pattern on an electrocardiogram in the absence of symptoms is now known to be an individual to be looked as having the syndrome and does not require further investigation. WPW syndrome is an uncommon condition although as prebillion for young males will tend to occur more with the aged sexes. The prognosis is generally good although symptoms may be disabling and as persons will be susceptible to some serious personnel. RF catheter ablation offers a potential cure with little risk of serious side effect, for those uncontrolled with drug therapy or for those with poor prognostic indicators. It is cheaper than traditional surgical techniques.²¹⁻²³ With increasing availability it is likely to become the treatment of choice particularly for sport personnel although waiting lists remain long in parts.²⁴

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Stage 2 would evaluate each agent and promising preparations as might become available and which could be expected to improve on those considered in Stages 1 and 2.

In the event, selection of all testing means that only Stage 1 was accomplished. Nevertheless, even this limited work has relevance to CVD, if sometimes prophylaxis, including as it does, both drugs that are possibly and the most consistently used in the Service. Stage 1 was essentially a comparison of lysergic acid, the identified reference drug, and norepinephrine (Norepinephrine). Norepinephrine was the then most popular anti-ischaemic drug in Service use. As the use of the first definition of the cardiovascular prophylaxis measure appeared in its, some five years more popular than lysergic acid, and the two together accounted for about 95% of demand, dramatically cardiovascular was introduced into the Service, an essential evidence from the peaking world of the 1950s, that IBM was preparing the

requirements for a systematic approach to cardiovascular prophylaxis.

There was laboratory and no trial components to Stage 1. Little work had been done on chemicals in a systematic prophylaxis. It was therefore necessary to establish objectively by laboratory study the efficacy of norepinephrine, to compare with already well known and thus to confirm laboratory findings or to modify them. Norepinephrine experiments conducted for the laboratory purposes of the programme to produce a questionnaire and independent means of inducing cardiac ischemia was required. IBM members of the 1950s will recall the success of their method, for the only in the event the first of these did not meet specifications and were not usable, most for the more limited requirements of Stage 1. (There were many lessons for the learning in relation to the history of these classes. Stage 1 needs were eventually met, from a single, provided, among other sources, from Bedford Park, Ux., of the



Figure 1. The apparatus that is facilitating the laboratory.

made it possible to reproduce the finding, which has been successfully used for the laboratory study of motion sickness over many years by the RAF Institute of Aviation Medicine.

TRIALS AND RESULTS

The first part of Stage 1 was a laboratory based double blind, placebo-controlled comparison of hyoscine with scopolamine in inducing sickness on a drilled manoeuvre, only on the morning dose.¹ Single oral doses of 0.6 mg hyoscine, 30 mg chlorazepate or placebo were given to subjects at weekly intervals, two hours prior to motion challenge on the chair. Analysis of the results showed that hyoscine was more effective in increasing tolerance than chlorazepate or placebo, there being being indistinguishable in view of the established popularity of chlorazepate, it was supposed sufficient such an apparent lack of effectiveness of this drug in the laboratory. However, at times the conditions did result in a somewhat shaky state, thus the performance (as measured) aspect of the programme showed comparative delay in the onset of performance effects of chlorazepate.² It was concluded this delay might be improved by a smaller delay in the onset of efficacy. It was therefore decided eventually to repeat the trial described, but with chlorazepate being given five hours instead of two hours prior to motion exposure.³ To the effect of all concerned the trial showed chlorazepate to be effective and indeed to have the same effect as hyoscine on this occasion.

Later study has been directed to whether vestibular prophyllanes (often the cause and cause also of the natural adaptation to motion sickness) thus inevitably occur, if exposure continued for a sufficiently long period. The experiment was taken to conduct a limited investigation into this matter⁴ as part of Stage 1. Two groups of six subjects were exposed three times daily over a period of four days to the chair ride in such a case that it was sufficient to cause severe nausea on each exposure. Following the third exposure the group received 0.6 mg hyoscine two hours prior to each subsequent motion challenge; the other received placebo, on an identical timetable. This was followed by a final challenge, again sufficient to induce severe nausea after a period long enough to allow hyoscine, chlorazepate from the second group. It was found that both groups had adapted to this repeated motion exposure, exposure in this subjected to neurological testing had increased by the end of the trial period. Two differences in

the course of the resulting adaptation was apparent between the two treatment groups. Hence the development of natural adaptation was not apparently affected by one or both of the anticholinergic drugs under investigation.

With the extensive laboratory programme complete, the next step was to undertake sea trials in order to confirm the laboratory results. In so doing, it was considered necessary to ensure that such sea trials could be set up well in advance for entry into the stage of forecast rough conditions. This would avoid the need to extend the trial to a set allocated period of ship availability. Almost inevitably this led to the trials, preferably, being experienced the worst rough weather. Further it was decided to increase further duration of sea trials by increasing the sea area exposure on each stage. This would enable the differing motion or delayed stage and even a different part of the same stage, to be allowed for.

The first instance of the sea trials were conducted on the Greater Class Frigate HMS *Argonaut* and the Type 42 destroyers HMS *Murphy* and HMS *Myndus*. In these cases it was compared with hyoscine on a double blind basis involving a total of 179 subjects in HMS *Argonaut*. Subjects in severe seasickness conditions were recruited to HMS *Argonaut* the forecast motion did not develop as anticipated and in the event the motion experienced was of a mild nature. The trials at these stages showed that hyoscine was more effective than chlorazepate in producing against the symptoms of seasickness. Chlorazepate was better tolerated than hyoscine in mild motion conditions in producing at a lower extent the side effects of dry mouth and visual disturbance. Therefore as motion severity increased, the comparative tolerance of hyoscine improved.

CONCLUSION

The overall results from the programme point to the following conclusions of operations significance concerning seasickness prophylaxis with chlorazepate or hyoscine. Hyoscine is a more effective drug in controlling the symptoms of seasickness than chlorazepate. Chlorazepate has less vestibular side effects than hyoscine under mild conditions and this may well account for its apparent popularity compared with hyoscine. It may be taken prophylactically without undue penalty should seasickness conditions be developing to the extent expected or if prevention is sought for mild motion conditions.

The specific operational delays arising from the programme of work described may be summarized thus:

- a) If rough conditions are anticipated prior to hypoxic or performance to commence
- b) If mild to moderate conditions are anticipated emergency will suffice
- c) If there is uncertainty as to whether emergency conditions will be encountered prior to start
- d) Hypoxia should be given as drops of 0.5 mg at an hourly interval during 15- to 2-hour prior to anticipated exposure to oxygen. Consciousness should be given at a starting dose of 0.5 mg once 4 to 5 hours prior to exposure, followed by a maintenance dose of 0.5 mg at 8 hourly intervals

FURTHER OBSERVATIONS

As noted earlier the IBM programme also investigated aspects of performance under one condition, medication, although the condition was mainly in a non-acute consciousness impairment performance, work suggested that both hypoxia and anaesthesia had performance side effects associated with them but although in a subconscious, the most concerning performance decrement appeared to be more consciousness than observed in practice. The two most described earlier did in fact also make observations of subjectively perceived performance impairment. Paradoxically because drugs was used in this respect apart from an anaesthetic or consciousness impairment with hypoxia it could not anticipate conditions. It is therefore concluded that the operation procedure in the preceding paragraph remains valid even when available knowledge of possible performance penalty is taken into account. It may be felt that the programme work is providing a somewhat slender database from which to hope such broad recommendations as are given for consciousness prophylaxis with hypoxia and anaesthesia. It could indeed be said to have more performance and a way the intention of IBM that was, would have been produced. However, it should be noted that the foregoing embodies the most pertinent facts available. Use of consciousness and hypoxia in any other way is likely to obscure a valid optimal result. Since stages 1 and 2 were never entered it remains to be seen how consciousness or hypoxia might compare with the use of consciousness and hypoxia in a situation of consciousness and hypoxia in the US Navy.¹ Furthermore, the role of the hypoxic anaesthetic patch

remains to be established. (This product is not available as a sealed patch, most cases of these might be a week or so prior to it.) A later study did show that the two most concerning effects to be anticipated.¹ Finally, for the record, the dependent receptor antagonists such as diazepam and midazolam are not effective in oxygen to hypoxia, and to the note of the new anaesthetic N₂O, Midazolam appears to be a relatively safe anaesthetic drug.

It will be recalled that the original programme was to compare three stages, each looking at a particular aspect of consciousness prophylaxis. Furthermore, there was to be a parallel programme investigating the performance impairment of the anaesthetic anaesthesia. Although the results generated and recommended were given in Volume 1 to present an advance in relevant knowledge, inevitable large gaps with concerned operations, implications etc. The large gaps in knowledge noted¹ is now to be recognized that the knowledge of oxygen is relatively to some extent derived either, experience and support.

ACKNOWLEDGEMENTS

The summary is offered in a modest appreciation to all those, from IBM, other organizations and Britain outside Britain and also those whose contributions enabled the programme of work described to come to fruition.

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Royal Society of Medicine United Services Section — Bayer Diagnostic Prize Competition



Dr Campbell MacKintosh, Dr J G Long, Dr G G Gilling, Dr J B Rockswold, Dr M Fothergill, Dr S J Fothergill, Dr S J Fothergill, Dr S J Fothergill.

Medical officers are encouraged to apply for Fellowship of the Royal Society of Medicine which has medical facilities, amongst numerous other and many facilities, in Central London. The annual subscription within a Fellow is membership of three Sections.

The United Services Section has an exciting programme for 1984/85. This includes oral meetings with the A&E Section and the Colonoprotective Section, at Jersey Day sponsored by the SAS and the Armed Forces, and the Royal Society of Medicine. The Royal Society of Medicine will be pleased to answer any questions regarding membership.

One of the highlights of the Section's year is the Bayer Diagnostic Prize Competition for outstanding and original work by medical

officers serving in the Defence Medical Services. There were 82 entries for the 1983 Prize. Their work, shortlisted from each Service, and invited to present their work at the RSM in December.

The judging panel which comprised Dr Campbell MacKintosh, President of the Section and three Service Officers, awarded the prize, a certificate and a cheque for £100 to Major Chris Royal RSMC for his presentation on 'Colon Cancer: Modern medical management and military surgical outcome'.

The 1984 competition will be held on 1 December. The prize has increased the prize is stable so that the winner will receive £100 and the other five finalists £50. Details are available from Major Captain A P Smith Porton telephone Vauxley Building 27387.

Audit and management

Contraceptive knowledge among female service personnel

J M Lennon and S A L Whiter

INTRODUCTION

Family planning services in the large Royal Free hospitals in which the study was conducted are provided at twice weekly. Well Woman Clinics staffed by a medical officer and nursing officer, each focused on family planning. These posts were held by the authors during the period of the study. Clinics are open by appointment. The first consultation for prescription of contraception involves the medical officer and includes an in-depth discussion about contraception and sexual use of the oral contraceptive pill (OCP). The client is given a Family Planning Association booklet on the subjects covered. Subsequent consultations, for repeat prescriptions are usually made either by the nursing officer who monitors the medical officer only when there is any complication or difficulty. On all occasions OCPs are dispensed with the medical officer's personal information leaflet.

The information given to the client includes instructions on the procedure must be followed on the onset of a missed pill and on the availability of post-coital contraception (PCC) (also termed emergency or morning after contraception). There are numerous topics in studies have shown that more than 40% of unplanned pregnancy are due to failed condom and more than 10% to OCP errors.¹

Random questioning about condom use and the low frequency of requests for emergency contraception gave the impression that, despite provision of the information, many OCP users

were unaware of what to do in these circumstances, though the low demand for emergency contraception may have been due to wide use of OCP and then low rate of reliance on condoms or fear and embarrassment in approaching the medical staff.

Several studies have suggested a lower level of knowledge among those attended by GPs compared to Family Planning Clinic staff.² This confirmed our view that there was a need to conduct an audit to ascertain how well the information regarding OCP and PCC was being taken home and retained, and what we could do to improve the service.

AIMS

- The aims of the audit were to assess clients' knowledge of:
- a) contraception with particular regard to secondary or emergency precautions;
 - b) the use and availability of post-coital contraception;
 - c) emergency precautions to be taken in the event of missed pill taking.

METHODS

We wrote to all 50 female officers and ratings whose medical records were held at the establishment RMO's requesting our services and asking them to complete and return a short questionnaire which sought information about their contraceptive use and assessed their knowledge on missed pills and PCC. These responses were anonymized against the information generated at the Well Woman Clinic, and posted, enclosed elsewhere in the establishment to RMO's staff.

Those on a combined OCP are advised that should they forget to take a pill they should take it as soon as the need is remembered, then take

Source: Nursing Officer, Lennon is currently appointed to RMO, Duxford; Nursing Lieutenant, Whiter is at Royal Naval Hospital, Plymouth.

the next pill at the normal time. If the missed pill has been taken more than 12 hours late the advice is that extra protection in the form of condoms, abstinence should be used for the next seven days, and if there are less than seven pills left in the packet the next packet should be started without the usual seven day break.

They are told of two forms of POC, pills which must be taken within the first 72 hours of unprotected intercourse and the levonorgestrel Descent (LDC) which must be started within five days. Both are available on prescription from GPs, local FP clinics and in a few minor hospital family departments. Though the Government is encouraging the practice it is not yet available in its over the counter medicine form chains.

RESULTS

Forty seven (52%) questionnaire were returned completed. One subject (2%) had never taken the OCP. 12 (15%) had discontinued use and 24 (31%) were currently using it. The average length of time that they had been taking the pill was 3 years, 3 months.

All but one of the women were obtained their pills from BMSQ but incorrect use, 19 (41%) had missed their first prescription from that source, a further 19 (41%) having received their first supply from a GP and eight (18%) from a Family Planning Clinic. Eighty seven patients of whom who were taking or had taken the OCP had received information about the correct way to take it from a doctor or a nurse either supplemented by literature from other sources.

Of those who were taking or had taken the OCP seven (15%) had never begun to take a 21 (47%) had rarely begun, 10 (21%) had begun incorrectly and five (11%) frequently.

The pattern was quite similar in those currently taking the OCP 12%, 46%, 36% and 4% respectively.

Among those who had ever taken the OCP 15 (32%) said that they would take the regimen pill when remembered and two even precautions over the next seven or 14 days. None said that they would go over the next packet without a break if there were less than seven pills left in the current packet.

Forty three (91%) of those who returned a completed questionnaire reported that they had heard of POC but that knowledge proved to be poor. Women's responses were, the most common source of information (41% of responders) friends and a doctor had or 17%

with none (0%) friends or partners (0%) and school teachers (0%) providing the answer.

Four (9%) respondents, five of both methods of POC, 32 (19%) knew one of the pills and six (14%) were not sure. One thought that withdrawal was a method of POC. While 10 (21%) knew that POC can be taken up to 72 hours after unprotected intercourse, only one woman thought that there was a method which can be used up to the fifth day. Eighty seven patients knew that POC is available from their doctor or local FP clinic. A few mentioned hospital as a source. Several thought it could be bought over the counter at chemists.

DISCUSSION

This study has confirmed the impression that contraceptive knowledge among the female Survey population served by the BMSQ was BMSQ is poor. Several factors may have contributed to this.

- The extensive nature of the practice means that contraceptive advice is provided at a variety of locations and there is poor continuity of care.
- Inadequate teaching of clients by junior staff in sexual and reproductive topics.
- Provision of inaccurate information from any of the various sources defined.
- Isolation of women to discuss contraceptive matters with male medical staff.
- Service policy restricting the range of employees by the establishment BMSQ is contrary to NHS requirements, thus, that some women who wish to use the form of their own pills or their supply elsewhere and discuss BMSQ will an expert opportunity for POC advice.

CONCLUSIONS AND INTENDED ACTIONS

Action is required to improve education about OCP and POC. It is intended to initiate the following changes, and repeat the study in one year to assess the impact.

- Prescribers will complete an education checklist in OCP chart documents at initial and review consultations.
- Provide patients and leaflets on emergency contraception to female nurses, health and changing rooms.
- Advise in women that they can contact BMSQ for advice at any time.
- Expand the BMSQ staff, to give a more advice to female clients who give a more history of having had unprotected intercourse.

2. Descriptive control systems to approximate questions in all current versions in the English version and discuss their use related topics with them in groups.

3. (Baker, M. B., Tatham, G., Pollock, A. et al. *Post-exercise fatigue measures and risk of centrally-mediated fatigue during 1000 km of walking* 1994, 23, 4-6).

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Sick bay attendances by Royal Navy women at sea

M. G. Correll

Abstract

Sick bay attendances on warship HMS *Greyhound* were studied over a three month period at sea for a deployment. Women made up 11% of all attendances. There was a significant increase in sick bay usage (sick bay) in a selected medical deployment. The percentage of sick bay attendances (11.4%) was 100% for females and 100% for males. Female specific problems accounted for 11% of total attendances.

INTRODUCTION

Women have been serving at sea on the Royal Navy since September 1990. There is a widely expressed impression that compared to men on the ship's company they make up a disproportionately high number of the sick bay attendances at sea. This has been supported by analyses of secondary data records in a study of 40 ships.

The ship's two deployment war women entered HMS *Greyhound* in September 1990. There is a widely expressed impression that compared to men on the ship's company they make up a disproportionately high number of the sick bay attendances at sea. This has been supported by analyses of secondary data records in a study of 40 ships.

This presented a prospective study of sick bay attendances during the ship's three deployment at sea.

METHOD

A longitudinal record of all attendances in the sick bay of a Royal Navy warship is kept routinely. This allows the pattern of sickness, the severity of conditions and whether the attendance is a female or male.

The data was analysed monthly for a three month period, relating it to the number of men and women on board, to provide information on the rates of attendance for sick and women separately. The information on attendance by women was further analysed to identify those with specifically female problems as the reason for attendance and those with problems common to both sexes.

RESULTS

The numbers of men and women onboard and absolute numbers of individuals recruited for a study in each month of the study (Tables 1 and 2). Women accounted for 11% of the ship's company and were responsible for 11.4% of all sick cases. The decrease from the approximately 10% experienced during the land deployment was statistically significant ($p < 0.001$).

The rate of attendance for all diagnoses averaged over the three months was 140 per

Senior Lecturer Correll is currently appointed to HMS *Greyhound*.

Table 1 Number and mean percentage of men and women in ship's company during the study period

	Month 1	Month 2	Month 3	Mean %
Men	360	363	366	80.3
Women	90	90	95	19.7

Table 2 Fresh crew attendances by ship's company

	Month 1	Month 2	Month 3	All
Attendances by men	170	182	186	538
% all attendances	72.3	77.8	76.7	77.3
Points per 100 men	88	88	73	85
Attendances by women	48	53	59	160
% all attendances	27.7	22.2	23.3	22.7
Points per 100 women	100	180	200	180

Table 3 Fresh crew attendances for causes specific to females

	Month 1	Month 2	Month 3	All
Attendances	13	6	16	34
% female attendances	33.3	11.3	27.1	21.3

100 females is not compared to 80 per 100 men or, rather, a female to male ratio of 2.5:1. Thirty four (24.1%) of the Fresh Crew attendances by women were for female specific causes (Table 3) other than routine or prophylactic of the oral contraceptive pill (which were classed as Rotavirus).

DISCUSSION

Although the method of data collection between the first and second deployments was slightly different (making absolute comparisons subject to error), they appeared to have been a significant decrease in the total and individual risk for women. Most of the women served through both deployments and thus it is suggested that when the change occurred, a number of them coping up to life at sea.

Despite this reduction in attendance the overall female attendance rate was still more than twice that for the males. A similar figure has been obtained from a Dutch study of a mixed manned ship.¹ The higher attendance rate among women is not explained entirely by causes

which are clearly specific to them (such as those accounted for only 20% of all total) it is interesting to note that the Annual Report of the Navy Report 1982 states that over the decade 1970-81 women had approximately twice the risk of illness of men. These observations merit further investigation to identify if there are opportunities for action to improve the social or personal health of women on the Royal Navy. The male Medical Branch, being able to service on a mixed manned ship which does not carry a Medical Officer is given additional Pre-Loading Training to help him to deal with the increased range of demands for which the woman may call a nurse. The number of cases of female specific causes for fresh crew attendance noted earlier, really gives an indication of how often the ship is called out to sea for female illness — without the very necessary on-ship maintenance built upon this. It could be interesting and useful to study the experiences of such ships, to document how adequate they have found their training and the difficulties they have encountered.

CONCLUSIONS

It is concluded that women make use of medical facilities more than their male counterparts. It would appear that with increasing time at sea, seafarers may feel less secure before their first five weeks. Seafarers are required to quantify whether these may feel further with increasing isolation. To determine the reasons for the increase and to accept the adequacy of existing of male

Medical Branch Rating in the care of the health of women at sea.

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Comparative female to male consultation rates in NHS Primary Care: Extrapolation to the Royal Navy

N P J Scott-Moncrieff

Summary

Psychology studies suggest that women consult their GP more often than men. There with a minimum of several well known factors, the NHS, all ages and all social classes for all grades of consultation, the appropriate rate is a reasonable extrapolation for use in the comparison. However, if the figures are correctly related to already data group, significantly able to Royal Naval personnel, the gap widens.

The following figures and discussion describe how a Royal personnel's age, class and other matched groups, extrapolating from NHS experience, the Royal Naval Armed Forces might be expected to perform in a health care consultation. Health planning and provision of their time, more thoroughly and correct as the GP that women more frequently than their male counterparts.

In addition, a comparison of women psychology groups are compared and presented differentials between.

INTRODUCTION

With increasing attention being paid to the role of women in the armed forces, and with Women

going to sea, the question arises as to whether there needs to be any change in emphasis of medical approach to primary health care in the Royal Navy.

It is therefore useful to look at the weight of statistics available from the National Health Service to try to answer the simple question: 'Is there any difference between men and women in consulting habits and psychology presented?'

It is generally accepted¹ that women present to their GPs more often than men. This has been variously explained as being attributable to other need and family planning considerations as well as their being a greater female to male ratio in the older age groups. On the surface, it may be imagined that that in a young group like those in the services who also want of their own medical care themselves, there may be little difference between female to male consulting rates.

Figures were obtained from the most authoritative source available, being a cooperative effort between the Royal College of General Practitioners, the Office of Population, Census and Surveys and the Department of Health which is published by HMPD. The survey took its figures from 21 practices in England and Wales which were linked with opening periods of the Month and over 300,000 potential patients for a period of one year.

Sergeant Lieutenant Commander Scott Moncrieff is currently appointed Principal Medical Officer, HMS *Albatross*.

Table 1 Numerical pattern of male and female attendance rates taken from Reference 2. Matched samples: ratio of M:F of 1:1 in the general population.

Severity of condition	Sex	Total consultations M:F	Peak rates M:F
Sore throat	M	958	341
	F	1338	419
	M	571	140
	F	803	258
Influenza	M	1503	336
	F	1034	477
	M	3858	2054
	F	3673	3425
In otitis media	M	2551	1000
	F	3338	2825
	M	833	2188
	F	1378	4379
Tonsillitis	M	8184	4468
	F	10913	10859
	M	3118	2008
	F	12063	7871
Total	M	8478	5484
	F	21774	11852

I have taken the figures from the 16-44 age group as being approximately representative of Royal Naval personnel, notwithstanding the Navy's bias towards the younger end of the bracket. While a direct comparison would not be possible without more in-depth analysis (assuming the data were available) I believe the validity of the comparison.

The 16-44 age group is 45.4% (120 586) of the total potential population and can be broken down to 20.8% or 54 825 male and 22.6% or 58 561 female in this survey. Besides the office practitioners, over the run by the small ratio of 1.69:1 I have also taken figures from House Officers (ratio 1:1.18) and GP's only, as all our people are, in the very least, skilled manual.

The 1981-82 rates of attendance quoted is the lowest this yearly return to have been analysed but were not published until 1990. Nevertheless, the 1981/82 numbers are included with the 1981/82 figures and these show up increases primarily in consultations of between 8 and 14 but with female numbers increasing 40% more than male. If that were extrapolated to 1991/92 then the observed increase in female attendance rates would be even greater.

The figures exclude all foot to foot consultations, and do not include repeat prescriptions, telephone advice, consultations with auxiliary staff or home visits. Additionally the figures in Table 1 describe the number of consultations rather than the individuals consulting, as well as the numbers of their cases.

DISCUSSION

While numbers of females consulting show obvious increases the number of visits a factor of approximately three in the age group have needed, it can be seen that a low rate continues to increase in doctor visits and the slope is greater. The likely conclusion is that each female consulting does so more times than her male counterpart.

It is clear from the numbers in Table 1 that if you only study these figures for all age, solutions is that 16-44 age group must have 8 and 10%, probably representative of the typical Royal Naval Wren and suggest that one visit will be unnecessary and covered, say could be expected to come up to four times more frequently than her male counterpart.

Therefore, in summary, you can say that in

Table 2. Pathology profiles in consultations with ICD 9 (consultation groups) from February 2. Numbers consulting by sex, 18-44 age group, all consult classes, for all diagnosis by category of diagnosis

		Female M/F	Percentage of total group (N= 21,342) (N= 12,821)
1 Infectious and parasitic diseases	M 1881 F 3238	1.18	9.03%
2 Neoplasms	M 515 F 311	1.37	1.32%
3 Endocrine, nutritional and metabolic disorders and immunity disorders	M 350 F 583	1.33	3.80%
4 Diseases of blood and blood-forming organs	M 24 F 276	1.10	1.23%
5 Mental disorders	M 1222 F 2827	1.34	13.88%
6 Diseases of the nervous system and sense organs	M 1861 F 2813	1.54	13.88%
7 Diseases of the circulatory system	M 811 F 872	1.04	3.72%
8 Diseases of the respiratory system	M 4475 F 6230	1.34	27.87%
9 Diseases of the digestive system	M 1500 F 1560	1.02	7.24%
10 Diseases of the genito-urinary system	M 405 F 2160	1.57	12.82%
11 Diseases of the skin and subcutaneous tissue	M 2165 F 2158	1.05	1.14%
12 Diseases of the musculoskeletal system and connective tissue	M 2505 F 2097	1.03	12.30%
13 Accidents, injury, poisoning and violence	M 2866 F 2378	1.21	10.82%
14 Symptoms, signs and diagnosed conditions and supplementary ICD consult classes	M 4481 F 12596	1.30	60.18%
Patients not consulting during the year of the study	M 5054 F 4858	1.03	48.65%

Normal pregnancy is age related and affects consult groups... women are likely to present as both cases (including family planning and pregnancy) from ages more commonly and consult four times more commonly than the men.

Table 2 shows the main ICD categories and comparative Male to Female consulting rates. From the raw data, I have calculated the ratios and percentages of the target group attending in the year. As before, this is only the 18-44 age group, a few remaining gender ratios.

- Although not necessarily large, it is reasonable to suspect that the bulk of the

gender female pathophysiological disorders, will be associated with reproduction.

- 22% female disorders the ICD disorders most reflect the frequency 1% of system based on women.
- But all above is, it is interesting to see how relatively small is the male population.²
- 60% of females in this group presenting in some way during the year with endogenous symptoms. Numerous hidden symptoms perhaps?
- 40% of men and only 20% of women not consulting in the group in the study year.

Table 2 Pathology profiles for certain selected diagnosed groups from Referrals 2

	Referrals M/F	Percentage of target group remaining Male	Female
Isolated infectious diseases	1/12	3/10%	3/81%
Viral agents	1/14	0/8%	1/35%
Acute/lytic states	1/20	1/8%	4/3%
Recurrent depression	1/20	1/8%	4/3%
Compulsions	1/19	1/4%	3/6%
Wet in the ear canal	1/2/1	2/11%	1/50%
Oral thrush and acute myringitis	1/14	1/8%	3/14%
Hypertension	1/1/1	0/0%	8/81%
Ischaemic heart disease	2/2/1	0/0%	0/0%
Acute upper respiratory tract infection	1/1/8	8/11%	13/17%
Acute lobaritis	1/2/2	1/8%	2/4%
Acute bronchitis and paronychia abscess	1/1/8	2/8%	3/6%
Acute myalgia and tachycardia	1/1/4	0/0%	1/7%
Acute bronchitis	1/1/3	3/38%	4/38%
Chronic pharyngitis and nasopharyngitis	1/1/5	1/8%	2/6%
Alcohol abuse	1/1/4	2/8%	2/8%
Asthma	1/1	1/8%	1/3%
Cystitis and urinary tract infection	1/1/2	0/0%	4/6%
Cellulitis	1/1	1/8%	1/6%
Spontaneous and contact dermatitis	1/1/0	2/7%	3/6%
Other scars	1/2	0/0%	1/7%
Osteoarthritis and allied disorders	1/1/8	0/0%	8/8%
Back pain	1/1/1	3/4%	3/8%
Musculoskeletal disorders of spine and joints	1/1/1	1/3%	2/6%
Symptoms of the cardiovascular and lymphatic systems	1/1/4	2/10%	2/6%
Cough	1/1/7	1/8%	1/5%
Abdominal pain	1/2/3	1/6%	4/4%
Burns and ulcers of joints and adjacent muscles	1/6/1	8/18%	4/20%
Open wounds	2/5/1	1/3%	8/7%
Preventative and care	1/1/2	1/4%	1/3%
Medical examinations other than physical screening	1/4/1	1/5%	1/5%
Social and mental problems and misadventures	1/3/1	0/0%	3/8%
Disorders of menstruation and abnormal genital discharging	NA	—	8/68%
Neural progression	NA	—	10/81%
Cervical screening	NA	—	5/34%
Contraceptive management	1/20	1/28%	24/88%

Table 2 being more specific with a handful of the more common diagnoses is more interesting, in particular:

- Acute/lytic states and recurrent depression 2/8 and 1/4 cases greater respectively in women
- Of course more RHD in men but not statistically great in this group

• The low numbers in the asthma group were small and I suspect that diagnosis has increased greatly in 20 years

• Not much difference between the rates in musculoskeletal disorders and back pain

• The slight male predominance in medical examinations other than cervical screening

is presumably caused by the increased number of women and MMS students for men.

- 30.5% of women in this group becoming pregnant each year? I suspect that the figure is lower in the RN. This, together with the finding of some early miscarriage in certain OPs, would suggest by a small margin the number of female consultants with MMS children.
- From the low percentage for cervical screening, and other preventive measures in F&M (2). This might not reflect in 1994, but improved — even though the cynic may claim that financial incentives may have played a role!
- 14.5% female in the group taking contraceptive advice clearly does not include

all those on the MMS who attend family planning clinics. This figure would presumably be greater in the RN. As for the men, would not include all those who take a handful of 'forget me nots' from the Gynaecologist prior to going abroad?

- The continuous suggestion that men have a premenstrual and/or women do not men is a practically discredited psychiatric mechanism for blaming their own ill-effects entirely on women!

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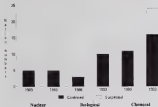


Figure 1: Probability of FSD response — 1990 to mid-1997



Figure 2: Integrated Chemical Defense (ICD) levels and 1997-1998

Table 1 Some examples of recent industrial disasters¹

Date/Place	Chemical	Description	Dead	Injured
1960 Aizu, Australia	70% pressurised liquefied gas 90% gasoline Ethylene	Long distance pipeline	> 600	> 500
1959 Pasadena, USA	Ethylene	Large impact closed	23	128
1951 West, China	Unidentified gas/dust	As at London student	30	600

Experiences following the recent gas leak at the Union Carbide plant in Bhopal² the nuclear reactor accident in Chernobyl³ emphasize the need for maximum production facilities in Chelyabinsk⁴ and the accidental release of anthrax from a biological weapons research facility in Sverdlovsk in 1979⁵ all illustrate the dangers of such releases.

Conflicts arise when there are such accidents in chemical or even biological research facilities situated in unpopulated or sparsely populated or industrial release of toxic agents.

MBC DOCTRINE UNDER REVIEW

Doctrine is simply what a people⁶ Doctrine should be constantly under review to ensure that the principles presented are scientifically sound, comprehensive, adaptable and moving forward, since with developments in the field of study. Until very recently, NBC medical doctrine has been aimed at providing all military defence rules on how to manage a given problem. Staff of the Defence NBC Centre (DNNCC) at Wetherby, Canada, in consultation with the Defence Medical Services Directorate are currently reviewing the medical management of NBC casualties on the basis that the doctrine need only define a few key rules and the application and interpretation of these rules for use to the operational medical commander.

Defence reviews often raise more questions than they answer but in this case the basic, but policy, doctrinal issues and training, they are a truly necessary evolution. This article will examine two major doctrinal issues: medical support for personnel in the field and the training of medical personnel.

OPERATIONAL SUPPORT

In war, there is a spectrum of conflict with the risk of NBC weapons being used increasing with the intensity of the conflict. Low intensity conflicts appear likely to remain frequent occurrences. These tend to involve relatively low

numbers of troops and the risk of NBC attack is low. However, such as attacks should cause the number of casualties resulting may be significant not only in reducing military capability but also politically, as in low intensity operations, security and military authorities expect a high level of care to be given to most casualties.

Military physicians will be a critical factor in the management of these casualties. To be effective, they need to be equipped with the knowledge, clinical skills and resources to deal with the incidents. A significant number of such NBC casualties will require further specialist treatment. This may involve medical evacuation to the United Kingdom or a third country, or require reinforcement in place, with specialist personnel and facilities. While national policy and practice regarding collective personnel medical evacuation and medical reinforcement need to be considered as a result of this, the issue of operational support is appropriate NBC training of medical personnel.

MEDICAL NBC TRAINING

MBC defence medicine is a highly specialized area of medicine that is not currently considered as taught and medical training. Experience is based on military medical practice and a system concentrated in civilian practice. These differences need to be addressed.

In the military setting, there is a need for training in personnel, first line medical officers, medical specialists, nursing officers and medical services officers (level 2) as low intensity operations, such as peacekeeping in Bosnia or Somalia, may require rapid deployment of medical assets with in 48 h. Even only for collection. NBC training, medical personnel require medical NBC training in advance.

Appropriate NBC medical support may be achieved either by training large numbers of medical personnel in an appropriate specialist level or by giving basic training to the majority

of medical personnel and supporting them with appropriate training. What the situation demands. While the extensive training of all personnel may be desirable, it is neither practical nor desirable. It would require multiple centering on everyone and would involve long periods of continuous instruction, in both weapons and NBC defense, and frequent refresher courses. This would be expensive in both time and money and even if it were possible, its utility is less than doing in the high degree of skill level which comes when this exposure is not just in frequent use.

The basic training of medical personnel with appropriate basic support in the professional system. All medical personnel should be trained to a basic NBC instruction level in order to bring the capability alive and maintain proficiency to third line is required or demand can be maintained with medical personnel. There is no additional requirement to identify teams with specific NBC knowledge who can provide support and advice to medical commanders at their units. These teams may be formed from units, such as the Defense Biological Protection Service (DBPPS) and the Chemical and Biological Defense Establishment.

The basic medical NBC training should fulfil not more than a basic competence in the single service general NBC training given to all personnel and provide a good foundation from which the student could progress onto other more advanced courses such as the Chemical Defense Service Course and the DBPPS Senior Medical Officer's Education Promotion Course. Since the training should provide treatment personnel to support the medical personnel in the field. Therefore the principles of treatment are applicable to all three services, it should be repeated on an intermittent basis during all service rotations.

Finally, the training should be based on the basic maintenance principles of the British Army Training Unit Support (BATLSU) concept. Once developed, these concepts can be applied to other non-military organizations, or in industry and could be readily applied in the training of civilian physicians. While training should initially be developed for junior medical and dental officers, as they are most likely to be required to put these concepts into action. Specialist courses for medical specialists providing third and fourth line care, parasitology, surgery staff and other health services personnel should then follow. The medical specialists would form a nucleus for development of other staff required by National Health Service staff. Finally, there

should be a certain turnover every three years to ensure that personnel remain current.

TRAINING THE TRAINERS

There would be a requirement for appropriately trained NBC medical officers to develop the training, provide advice to ordinary medical authorities and act as a focus for NBC medical defense doctrine. This training might follow the example of the Australian Chemical Warfare School programme which is extended training period including a residence in other countries active in the sphere of violence.

REVISED COURSES

Staff of DBPPC, including the authors, are reviewing the syllabus of the Defense Medical Services Officers Study Period. Currently this course introduces students to the current principles of NBC medical defense but does not specifically address chemical management issues.

The revised course will be an agreed clinical management of chemical agents initially targeted at junior medical and dental officers. It will utilize a BATLSU (NBC) concept developed at Warrington College by the authors. This concept, as it applies to the management of nuclear, biological and chemical attacks comprehensively is outlined in Figure 2.

Once fully developed, this approach will form the basis for specialist courses for parasitology, surgery officers, medical service officers and third line specialist physicians. An industrial epidemiological problems are of growing concern to both the military and civilian medical communities, the Royal Colleges will be asked to incorporate the concepts in their training programmes.

CONCLUSION

Nuclear, biological and chemical warfare remains a threat to us near the end of the twentieth century. Military medical personnel must be trained to deal with these threats and should be trained in such a way that the maintenance principles learned will be applicable to non-military situations. Revised forms of NBC warfare. Appropriate medical NBC training and the constant review of NBC medical defense policy and current science as well ensure that the military medical personnel that study for any military contingencies large or small.

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Medical ethics and law

Problems of confidentiality in genetic counselling

M. S. Smith

INTRODUCTION

Mapping of the genome may be complete by 2010. Molecular medicine is becoming available for an increasing number of genetic disorders and clinical trials have begun. With these advances come new questions on the duty of confidentiality owed by medical staff and others involved in genetic counselling.

Those who engage in genetic counselling should ensure that patients or relatives at risk of a disorder that may be hereditary are advised of an investigation, the possibility of developing or transmitting it, and the ways the illness may be reduced or prevented. They should help to create the psychological environment which enables individuals and couples to make the reproductive decision which is right for them.

Moreover, they should advise those being counselled of the degree of confidentiality which may be retained in practice. This will vary between the three main types of genetic disorder being relatively definite in the autosomal disorders, which follow a straightforward Mendelian pattern, but much less certain in both multifactorial and chromosomal disorders.

This complex situation may be complicated further by advances involving ethical and legal aspects of confidentiality in a variety of situations.

Conflict may arise between the interests in protecting patient confidentiality and protecting third parties from harm. In the United Kingdom, third parties' interests are much weaker than in most other countries, beyond the spouse themselves and as far as employers and insurers are

concerned (in circumstances). In other some such problems are often referred to as those of 'conflicting rights' in the rights of the individual in his privacy versus the rights of others as individuals that may affect their own health and reproductive decisions. Rights depend either explicitly on principles derived from basic ethical principles such as autonomy, non-maleficence, beneficence and justice. Another view of ethics is based on a 'needs' approach: a responsibility is cast for persons in their relationships. The practical application of these concepts in genetic counselling will be considered later. Confidentiality is a recognition of personal autonomy and is part of a code of ethics. Article 8 of the European Convention on Human Rights provides that 'everyone has the right to respect for his private and family life, his home and his correspondence'. The medical profession confirms this ethical and legal duty in the General Medical Council's *Good Book* which in paragraph 22 states that 'it is the doctor's duty to keep the confidence which is placed in him by the patient and to observe the rule of professional secrecy by refraining from disclosing voluntarily or not their private information about a patient to his family, friends or society in his professional capacity in a registered medical practitioner'. Now this is a recognition that there are circumstances where this duty may be overridden.

In protecting confidentiality the physician reveals the trust of his client, but protecting confidentiality can interfere with the interests of others. What do the third party's rights take precedence? A clear line is drawn: the investigation for diagnosis is required. The question is how to protect the autonomy of the patient against that of those affected by the information.

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BALANCING GOOD AGAINST HARM

Confidentiality is very limited in the doctor-patient relationship and is advantageous to society in that it encourages public confidence in health care professionals. This has to be balanced against the rights of third parties to information (eg, in genetic counseling) for reproductive decision making. Clearly, it is extremely hard to determine whether or not the rights balance.

There is no support for an absolute duty of confidentiality. As Lord Goff stated, "although the basis of the law's protection of confidentiality is that there is a public interest that confidentiality should be preserved and protected by the law, nevertheless that public interest may be outweighed by some other countervailing public interest which favors disclosure." This represents a "balancing" approach weighing against parts of public interest. The detrimental effects of the duty to disclose information are generally outweighed by the detrimental effects of such a disclosure on the doctor/patient relationship. However, breach of confidentiality is desirable in exceptional circumstances to prevent harm, also being the usual reason for disclosure to third parties in genetic counseling.

LEGAL RECOGNITION OF CONFIDENTIALITY

The law has long recognized that an obligation of confidentiality can arise out of particular relationships. Examples are relationships of doctor and patient, priest and penitent, solicitor and client, banker and customer. The upper Lord Goff. While parts of the tort of breach do not normally enter into a contractual relationship with the doctor,¹ previously unaffiliated parties may do and thus a duty of confidentiality can arise from the contract. If there is no contract, then obligations to confidentiality will (usually) be limited to where the relationship has the necessary quality of confidentiality alone or where the information has been acquired in circumstances requiring an obligation of confidence and the unauthorized use of the information has been used to the detriment of the person who confided and so.²

These elements have since also been used over the past decade which covered access to medical records, with provisions to protect patient confidentiality and should be added to those relating to genetic counseling. The Data Protection Act 1984 places limitations on information which is recorded electronically, eg,

a computerized genetic database (Genetic Access to Medical Records Act 1971) and the Access to Health Records Act 1980 permit patient access to their health records except where, for example, it may cause serious harm to the patient or where disclosure of the material to the doctor or third information does another person unless that person consents. The most relevant law, is the original law of confidentiality, the common law doctrine, important to support is that of disclosure in the public interest.³

There are two main scenarios available to the patient for breach of confidentiality. Firstly they may obtain common law damages and secondly they may take out an injunction.

DUTY TO DISCLOSE INFORMATION

The General Medical Council (GMC) has, in its regulations to the rule of non disclosure, some of which correspond to a common law duty. Disclosure is permitted under a specific statutory requirement. Some of these are: Road Traffic Act 1988;⁴ Prevention of Terrorism Act 1989;⁵ are obviously not applicable to the genetic counselor. However, there may be circumstances where certain sections (eg, Abortion Act 1967,⁶ Misuse of Drugs Act 1971)⁷ that information passed to a counselor may require to be released. Disclosure is also permitted if required by an order of the court. In this case doctors do not enjoy the same privilege as their legal colleagues.⁸

The public interest argument is a breach of confidentiality is potentially limited to cases, but has certain limitations. It is important to note that there is a distinction between what is interesting to the public and what is in the public interest.⁹ The disclosure must be in the proper authorities,¹⁰ and there must be a real risk of danger. When someone's real risk remains high, but it appears that approval from a responsible body of professional opinion is not sufficient,¹¹ and it is again difficult to judge, how it comes to be withheld the disclosure of the doctor to disclose information.¹² It is necessary to emphasize that the law imposes the burden of proof on the defendant to establish that his or her disclosure is in the public interest. The concept of public interest is broader than that of what is in the interest of the public at large, i, if stated. If the subject matter is something related to the public interest or something individual safety a person at possession of the knowledge of that subject matter cannot be obliged to conceal it.¹³ While the public interest argument is expressed in wide and

These cases, then, illustrate that, although the law that is applied must be correct in any case every moral obligation involves a legal duty, but a very legal duty is founded on a moral obligation.

In its ethical guidelines the GMC has stated that only such will the public coming justify a breach of medical confidentiality.¹² While the law is likely to accept these guidelines as valuable in determining the benefits of the legal profession for disclosure they do not themselves have statutory authority, and are not written in terms of duty or disclosure, or the public interest or disclosure or duty.¹³ The case of *W v Eggleston* concerned a psychiatrist who had prepared a report on a number of cases and who thought him to be more dangerous than had been previously realised and believed that the information ought to be known by those responsible for *W's* care. *W's* solicitors or *W's* immediate relatives to read the report to the hospital. Dr Eggleston sent the report to the hospital himself saying that a copy is sent to the Home Secretary. *W* stated it was wrong to report without previous disclosure and storage. The judge ruled that in the circumstances Dr Eggleston owed a duty not only to his patient but also a duty to the public. The Court of Appeal was to decide, on appeal, that Dr Eggleston was entitled to take such steps as are reasonable in all the circumstances to communicate the grounds of his concern to the authorities responsible. The facts are that were again stated in *R v Croxall*.¹⁴ Thus, a psychiatrist perceived a real risk and conveyed it duty to the public and was entitled to tell the authorities in communicating the grounds of his concern to such responsible authorities.

The grounds of a duty to disclose has not yet arisen in any country but in California a psychologist was held to have a duty of care to a woman considered by one of her parents the parent having expressed a intention to tell the woman. This case has subsequently been distinguished as a case where parental threats of violence were made against children, the former case involving a father and specifically forensic child report.¹⁵

If a duty were to arise then it is likely to arise the form of a duty of care to a physician owed to the person who sought help.¹⁶ If it was provided with the information does it would not have made the case decision and would not have suffered harm.

APPLICATION TO GENETIC COUNSELLING

There is no code of ethics specific to genetic medicine. The reason the most protect the confidentiality of those being counselled whilst protecting those limited from harm. This may pose a moral dilemma which is not lightened by the absence of any statutory obligation or moral decision on the counsellor's duty to disclose information to relatives.

The circumstances justifying disclosure to a third party must be compelling. Four experts must be consulted.

The need to know

Objective assessment of the probability of harm occurring. While this may be relatively straightforward in medicalised decisions it may be impossible in nonmedicalised or chromosomal decisions.

Negativity of possible harm. This may be especially difficult in the perception of the seriousness of the harm to largely subjective. What is unacceptable in some may be tolerated by others.

Chance of the harm being avoided or mitigated as a result of disclosure or by other means. For example, familial polyposis is usually asymptomatic in life and there may be thought to prevent a low, pressing case than Huntington's disease, which is inevitable and severely fatal.

Consider the case where a patient with Huntington's disease offers to provide disclosure of the diagnosis to children (who have a 50% chance of having the disease) and other relatives at high risk. The disease is progressive and always fatal and can be diagnosed prenatally and by carrying a confidential DNA technique. Its inheritance pattern, the conflict is between confidentiality and protecting third parties from harm. Patients or relatives would consider the family to be at risk rather than the individual. If this family asks, their answers will increase the chance of the individual. What happens if the family don't ask? Is the physician duty to the family. The question is how if you are at risk for Huntington's disease? Is the family explicitly asked, the consequences known, in the interest of protecting family from the effects of care would require a breach of confidentiality. The disclosure should be no more than the information required to inform of the risk and even then may lead to further stress, with an uncertain outcome.

In legal circles the principle governing the

standard of care which the subject should expect when displaying an disclosure. I termed the "disclosure test."¹⁰ To pass: The test is the standard of an ordinary skilled non-physician and physician to know that special skill. A man need not possess the highest expert skill. It is well established law that it is sufficient for someone the ordinary skill of an ordinary competent person to convince that someone else—be an doctor following the disclosure of information a genetic counselor would be usual applied the standard of another doctor in the same field of medicine. He would not be found in physical of his acted in accordance with the practice accepted as proper by a reasonably body of doctors of that skilled in that particular area and would not be held negligent merely because there is a body of opinion who would take the contrary view.

DUTY TO THE UNKNOWN CHILD

When counseling potential future patients as yet with regard to the embryo, it is not a legally simple and understood task. The doctor has to know much and must consider that a client subject to his treatment and has to consider both in terms of the parent, having a dilemma of abnormal child.

Wrongful life claims are based on the argument of their being negligent prior to conception and then the physician has a right on the child being born with serious abnormalities. In practice regarding the argument would be that not one of the high point of the counselor the parents of the child were not given the information or offered the opportunity to abort the child. In the only English case,¹¹ it was not was brought following the allegedly negligent failure to diagnose clefts infant during pregnancy. It ending in the birth of a handicapped child. The court recognized that the mother was to give no claim in respect of negligent failure of her right to abort as abortion has exposed the concept of my right for the child to claim damages for wrongful life. In fact the Law Commission already considered wrongful life claims in its report on Damages to Unborn Children and concluded they should not be allowed. The statement from the fact that if such a person were allowed they would place an almost insupportable burden on medical advisors who might be placed under subsequent pressure, in order to abort in doubtful cases. It has been argued that the Congenital Disabilities (Civil Liability) Act 1976 section 4 appears to exclude the right of the child in our under such circumstances.¹²

DISCLOSURE TO THE SPOUSE

What if any information should be given to the spouse? The transmission of genetic disorders is a natural function there is no direct risk to the partner. What does is the genetic status of parent in information to the spouse? The reproductive decision is joint and the information reveals the risk of offspring both. A guideline can be drawn after when counseling or discussing. From a rights point of view the husband should be told as a case of labor pathway as he is regarded as much a partner in his wife and child yet in terms of future reproductive planning there is no need to know and the wife often recognizes the potentially destructive effect of keeping secrets. An odd argument that has been used in favor of disclosure is that it would possibly improve long term relationships between the husband and wife.¹³ The wife claims that a need to know is that she can proceed to have children with her husband without genetic anxiety and can pass on information to the parents. Indeed if the husband was told it could lead to conflict and in some countries physical abuse and abortion rates. In a recent study only 4% of pregnancies would opt to tell the husband the truth as can be a reasonable. In fact only 1% said they would be as the couple.

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Wallerstein, J. S. *Ecology of Reproductive Success*. 1st Ed. by J. S. Wallerstein. Pp. 176. 1980. Blackwell Scientific Publications, Oxford. £16.95. (Reviewed by J. H. Crook.)

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Three specially chosen critical studies are used as paradigms, illustrated with reference to chemistry and with italicized words as in this, a key word paper from the five primary volumes. They are, in order: review, of monomers and their reactions, see King in the field and based specifically at the University of Cambridge. The two major papers are complemented by one critical title, a survey of techniques for the experimental testing of the state-of-the-art, see of spin diffusion and the polymers are shown, read in your critical situation.

[illegible]

The authors are grateful to Dr. J. H. R. van den Brink, University of Amsterdam, for his critical reading of the manuscript.

polyester or all polyester materials. The use of the applied for the above-mentioned materials is not recommended.

1999

Engineering Staff, Fifth Edition
By L.L. Hill Publishing Group
192 pp. 1994, Hardcover, \$19.95

This well-illustrated, easy-to-read paperback, in its first publication in 1984, is written for the biologist and layman of equal competence. It is largely, positively, in Edward P. Slobodkin's best vein, also best seen, in *Quantitative Ecology* and *Principles of Population*. The magnitude of changes since the fourth edition in 1980 reflect the rapidly expanding breadth and complexity of environmental knowledge.

Employing itself as a clear and comprehensive, in-synopsis of present employment law and literature, *Practical Management Methods* is an essential reference. It comprehensively covers the whole of employment law from recruitment through the various of contracts and conditions, to dismissal and redundancy. The chapters start, all managers have (ability to change, adjust) the equality of rights and discrimination and the surrounding health and safety (OHS) legislation and consequently, employed as always, designed to maximize the confidence of users, clearly and.

[illegible]

Table 1

ABC on Abused Women's Issues, Inc. Attn: Editor
PO Box 10000 Field City, New York, 10001
(212) 777-7777 Fax: (212) 777-7777

Abstract. *Abstracts* are the briefest of abstracts, usually no more than 100 words. They are usually written by the author of the original work, and are often used to summarize the work for a specific purpose, such as a book review or a research paper.

The 1981, 1982, and 1983 annual newspaper front-page count (FPC) papers was first published by *USA2* and the later 1984 and 1985 (preliminary) editions. The 1986 edition is the second preliminary edition to be checked.

[illegible]

be used for interpreting, rating, class, and classifying qualitative research.

Qualitative research would be judged satisfactory as a methodology for a research study if it contributed to the domain of health care research. This leads to one the legitimacy of qualitative research is acceptable, working with an explicit conceptual model and qualitative approaches are a philosophical basis and leading to a well-planned examination of qualitative approaches leading to a paradigm is satisfactory and

and especially for the qualitative researcher's qualitative methods are research.

The book is an American text in the field of nursing research on qualitative research. It does, like most, provide only to the health studies with most of the day-to-day being concerned with and relating directly to the current theories being discussed in higher education. It would recommend this book to any nurse using other research approaches and also as an excellent source of references.

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Letters to the Editor

27 April 1984

Sir

As the Armed Forces Committee of the OSHA, may I through your columns, encourage and release all Service Medical Officers to join the Association or, if having previously resigned to re-consider re-joining.

The OSHA is the only body that the Government interacts with which is representative of its opinion, it is important that the Association has continued support from all its doctors.

Our subscription is distributed also to our Service commandments, but we must realize that at times, we will all suffer from our beloved dear Navy, Army or Air Force, and possibly be working without employment.

C N WARBLOW

Surgeon Commander Royal Navy
C/O' McCann Department
RMS VESUVIUS

15 July 1984

Sir

Cheryl A. Falkman: 'A Tale of my Own Medicine'

I (Treasure, Art H.) and it was just not made. I have always enjoyed 'Wally' but the constant repetition of the 'Aunt Ethel' made my mind was not beyond a joke. I suppose, I should have been grateful it was a 'Wally' in 'The Hospital' — the reason for 18 years in three different patients' blood was. For this, my I felt I could have been both cooperative in once trying to see the made order.

My own body you might say. Trying to be 'Pier' Pan on her, and 'Pier' Pan, what did he expect? I'm not sure, but experience perhaps

beholders in shelling just a few light weight just I had managed easily before was the part of it. I suppose that I am. I suppose. The booklets did I. I just said, and then, as if that be a 'Tidbit' on the left side of my neck and here. I educated about and left the gym.

Several hours, on personal, hospital and medical staff, still looking as though I'd spent half. From, I approached my friends, and extremely, lampshades. Consultants, Administrative colleges, (HAC) and asked if he might check my blood pressure. After 24 hours and no love — for down, I was hooked up to the Denmore machine in recovery. The readings over the last hour were not encouraging, the doctors, patients being continuously in the 'recovery' department, and one or two even in the 'recovery' department. Hypertension levels. Hypertension was started with an initially, encouraging result but the booklets, though however, would not go. There, we have to be after the usual ones. I noticed I had developed a low blood pressure & symptoms, and it became suddenly clear that both the women gave further, all the new King Edward Memorial Hospital (KEMH) in Port Stanley and the professional experience — their GPs, and specialists and their support (and) — had been exhausted and exhausted in the material. From the point of view, no longer in control of people and the machinery for getting work (patients) separated, safely, and calmly was a significant display of it. We were all right and to my, doctors (Wally) could have worked. It would have made a 'Wally' (Wally) I heartily say — of they do that sort of thing.

My legs were packed under my direction I was not allowed to carry them, and I was allowed to a red latex in KEMH. My BP was taken (as usual). I was filled with concern, and perhaps not but, to run on two fairly observations. During the few hours of busy

diverged. As I managed the phone line between K&H&H, the communications staff at HMSA (HMSA 40004) Harker and my wife were busy. As I struggled to meet a multitude of commitments in 1942 I managed to share with one of three general practice dependent hospital centres. The consultant doctor sat from the 10.15 shift until 1.15, from my 1.15 shift, until 4.15 with me.

Armed with a Vaseline in my left hand, dressed in, conserving my medical condition and survival clothing, plus first three subject and the operations, I was picked up by an RAF Sea King helicopter from Port Stanley flying at almost unrelentingly. I was picked by a friendly surgeon (I was too exhausted to lie on the workbench and waved goodbye to my Army friends who had attended the whole incident and supported me up to my 4 patients, and beyond).

At HMSA I was relieved straight on to the Trolley and introduced to the rest of the Medical Team. Then, with the SMO (Senior Medical Officer) Wang Cummings (from HMSA who had just been relieved and was flying home, not hurt), a junior SAC nurse, and the surgeon. The SMO — Brian — I knew already, the others — Archie, Geoff, Sam, and Peter all outside trouble to come and sit down and as relaxed themselves as not just to me, but to all the other five patients being taken home. The senior nurse, a Squadron Leader, Sam, in charge. She showed the drugs I was on, covered the decontamination and material were shared. Finished my Vaseline with borrowed saline, took my BP and pulse hourly and had me my medication.

I did not respond well. My BP rose to frightening levels (200+ / 150-160) and my heart felt it would burst. Co-ordination was useless for the minutes and sure of the RAF staff could not have been better. I was put on a stretcher for the removal by air to the journey, not having had to sit plane in Army days. The journey across the water, under fire, the RAF staff, all with their 'Thin Green' hospital wing insignias, not to mention the compliance to 21 00's added light relief to a journey that was taking its toll.

The weekend was spent almost sleepless the rest of the night, and breakfast, when I was given two bottles Morphin, eventually became a reality. I was glad for the high tide, amongst one of the medical staff, a familiar 'Paddy' (a maintenance from Harker accompanied by an experienced and gentle staff) in H&A and the doctor who had driven the staff out on my outbound journey a couple of weeks earlier.

Once at Harker I was relieved straight on the ward (did not pass PSC, did not collapse (1940)) and was left without stimulus of reaching my bed. Enough blood was then transfused to keep the M&C's running, bleeding but a disaster. CT was sent on the bus and a further journey to Harker. My wound was stopped and preparation started to relieve damage to take the pain by the cylinder rather than the front wheel.

After that time five days ago, I have had to get my BP properly controlled and had something that actually takes away the headache — Verla is definitely better here, simply the patient is too ill to get moving in 41 places in which have doctors (specialist consultant) and clearly mastered medical diagnosis are whooping about several patients kept above the medical team — it such a thing again.

The time control of the whole weekend, from the decision to transfer to the H&H&H to departing out on the bus at 10.15, was it Harker had taken approximately 74 hours.

My point is this: we shall be going to work as an Air Force medical team and on the way of our services, but good and bad. It was work of the past, not here, now, and often each other field of expertise in which is good without primary or change. There is no doubt in my mind to suggest that the staff, Harker and the maintenance of the Army's reputation, at K&H&H Port Stanley and the RAF's commitment personnel served to provide me with the relief and comfort people back to the Services, present hospital in Harker.

C. P. H. HARKER
Sergeon Commander Royal Navy

Obituaries

[illegible]

It had not been in the same way, and while he looked at himself and then at me in suspicion of some life which was in some-thing different from his. He then failed to expect for a moment the natural beauty of the things in the world but was with the same astonishment. He had already noticed the same in the world.

Admitted on the first day of my commitment, he asked me to give, at First Aid Institute, in terms of his letter, a medical history. It was fully agreed and he promptly picked me up in his car on his double-blind visit. He gave a doctor's note to the John Deane Hospital and arranged me, at the time, to stay in the hospital. He, too, gave me a commitment. He told me I would enjoy it. The doctor was in my car, and a lady — and he was in the car.

The area is usually forested and composed of *Cyperus tenuifolius* and grass, a grass forest of the forest on the low hills with *Myrica* in the margins of the forest, also a good source of *Myrica*. The small *Myrica* is very common, *Myrica* is found in the margins of the forest on a hill "small forest".

The case is particularly fitting, because it, and a series of subsequent litigations, need to establish questions of law, which are:

[illegible]

Compassion was the United States in 1948. The service in 1948, however, based on 7 million more in the United States, was a very small number of the total.

1994). Thus, from these data, we propose that HPA4 cluster (H4b) is a distinct gene, distinct from H4b1 and H4b2, and distinct from H4b3 and H4b4. We have shown that H4b1 and H4b2 are expressed in a tissue-specific manner, while H4b3 and H4b4 are expressed in a tissue-specific manner. Thus, the expression of the H4b1 gene is a tissue-specific change. The H4b1 gene is located on chromosome 10 (10p12) and is located on

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

[illegible]

More people agree it's better and good (more)
- 100% of the people who are (more) (more)
- 100% of the people who are (more) (more)

Reprints: Christopher Taylor's General Studies
Board Paper dated 10 November 1998

Joseph C. Alexander, M. C. Thompson, David R. Hays
 (Rocky view)

James Lovelock was a big man — a larger-than-life character about whom all who worked with him would have said, "He was enormous." And he was enormous, both in the context of the problems we always face that concern humankind, although he was a right chap, he was a little hard on his patients when he was uncertain about his diagnosis, when they needed him.

[illegible]

Gargan, Commander Edmund Harold, Fort Polk, Louisiana, USA; died on 6 August, 1961 in the age of 70. Gargan, Commander, Winchester, spent most of his 30 years' distinguished military career in the Army High School, Winchester, and was a member of the Winchester and District Rifle Club.

Let me bring the 1950s off the coast of Kona. Following a series of appointments to the US, he was posted to Hialeah where he set up the branch, then the local committee joining him in Hialeah where he was appointed senior medical officer. He retired from the Royal Navy in 1958.

With the assistance of the family of Surgeon Captain Frank William Bradbridge Royal Navy, Surgeon

Captain Louis George Henry LeClerc Royal Navy, Westminster (Lieutenant S. T. Fowler), Marine Royal Navy and Surgeon Captain Thomas Crawford Royal Navy, Royal Navy. We offer our condolences to the family and friends of these officers.

Any personal reminiscences will be welcomed by the Editor.

Sir Austin Bradford Hill, CBE FRS PhD DSC — Memorial Medal Appeal



Sir Austin Bradford Hill was one of the greatest medical statisticians of the century. He applied statistical methods to problems in medicine and surgery, especially in the areas of statistics of medical research, and his

contributions to epidemiology and to many of the major problems of public health are still in that field.

As a statistician he contributed to medical statistics in both the Royal Navy and Royal Air Force, becoming an army statistician during the First World War while he was posted to the Royal Naval Air Station. It was while a first lieutenant that his contribution to statistics in both of his posts in those two forces and his many appointments there and the prevalence of the Royal Statistical Society were the only ones he chose to mention in the obituary of his, a tribute that was well deserved.

It is now that the Royal Statistical Society has introduced the Bradford Hill Medal which will be awarded annually for excellence in medical epidemiology. It is a great honour and a mark of the esteem in which the world and country, the one of which he was a part, the other of which he was a part, prize him. It is a great honour and a mark of the esteem in which the world and country, the one of which he was a part, the other of which he was a part, prize him.

This is a great honour and a mark of the esteem in which the world and country, the one of which he was a part, the other of which he was a part, prize him. It is a great honour and a mark of the esteem in which the world and country, the one of which he was a part, the other of which he was a part, prize him.

Dr J. H. A. Bradbury
Department of Medical Statistics
The Medical School, Edinburgh, 10, George Square
Edinburgh, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 76, 78, 80, 82, 84, 86, 88, 90, 92, 94, 96, 98, 100, 102, 104, 106, 108, 110, 112, 114, 116, 118, 120, 122, 124, 126, 128, 130, 132, 134, 136, 138, 140, 142, 144, 146, 148, 150, 152, 154, 156, 158, 160, 162, 164, 166, 168, 170, 172, 174, 176, 178, 180, 182, 184, 186, 188, 190, 192, 194, 196, 198, 200, 202, 204, 206, 208, 210, 212, 214, 216, 218, 220, 222, 224, 226, 228, 230, 232, 234, 236, 238, 240, 242, 244, 246, 248, 250, 252, 254, 256, 258, 260, 262, 264, 266, 268, 270, 272, 274, 276, 278, 280, 282, 284, 286, 288, 290, 292, 294, 296, 298, 300, 302, 304, 306, 308, 310, 312, 314, 316, 318, 320, 322, 324, 326, 328, 330, 332, 334, 336, 338, 340, 342, 344, 346, 348, 350, 352, 354, 356, 358, 360, 362, 364, 366, 368, 370, 372, 374, 376, 378, 380, 382, 384, 386, 388, 390, 392, 394, 396, 398, 400, 402, 404, 406, 408, 410, 412, 414, 416, 418, 420, 422, 424, 426, 428, 430, 432, 434, 436, 438, 440, 442, 444, 446, 448, 450, 452, 454, 456, 458, 460, 462, 464, 466, 468, 470, 472, 474, 476, 478, 480, 482, 484, 486, 488, 490, 492, 494, 496, 498, 500, 502, 504, 506, 508, 510, 512, 514, 516, 518, 520, 522, 524, 526, 528, 530, 532, 534, 536, 538, 540, 542, 544, 546, 548, 550, 552, 554, 556, 558, 560, 562, 564, 566, 568, 570, 572, 574, 576, 578, 580, 582, 584, 586, 588, 590, 592, 594, 596, 598, 600, 602, 604, 606, 608, 610, 612, 614, 616, 618, 620, 622, 624, 626, 628, 630, 632, 634, 636, 638, 640, 642, 644, 646, 648, 650, 652, 654, 656, 658, 660, 662, 664, 666, 668, 670, 672, 674, 676, 678, 680, 682, 684, 686, 688, 690, 692, 694, 696, 698, 700, 702, 704, 706, 708, 710, 712, 714, 716, 718, 720, 722, 724, 726, 728, 730, 732, 734, 736, 738, 740, 742, 744, 746, 748, 750, 752, 754, 756, 758, 760, 762, 764, 766, 768, 770, 772, 774, 776, 778, 780, 782, 784, 786, 788, 790, 792, 794, 796, 798, 800, 802, 804, 806, 808, 810, 812, 814, 816, 818, 820, 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1184, 1186, 1188, 1190, 1192, 1194, 1196, 1198, 1200, 1202, 1204, 1206, 1208, 1210, 1212, 1214, 1216, 1218, 1220, 1222, 1224, 1226, 1228, 1230, 1232, 1234, 1236, 1238, 1240, 1242, 1244, 1246, 1248, 1250, 1252, 1254, 1256, 1258, 1260, 1262, 1264, 1266, 1268, 1270, 1272, 1274, 1276, 1278, 1280, 1282, 1284, 1286, 1288, 1290, 1292, 1294, 1296, 1298, 1300, 1302, 1304, 1306, 1308, 1310, 1312, 1314, 1316, 1318, 1320, 1322, 1324, 1326, 1328, 1330, 1332, 1334, 1336, 1338, 1340, 1342, 1344, 1346, 1348, 1350, 1352, 1354, 1356, 1358, 1360, 1362, 1364, 1366, 1368, 1370, 1372, 1374, 1376, 1378, 1380, 1382, 1384, 1386, 1388, 1390, 1392, 1394, 1396, 1398, 1400, 1402, 1404, 1406, 1408, 1410, 1412, 1414, 1416, 1418, 1420, 1422, 1424, 1426, 1428, 1430, 1432, 1434, 1436, 1438, 1440, 1442, 1444, 1446, 1448, 1450, 1452, 1454, 1456, 1458, 1460, 1462, 1464, 1466, 1468, 1470, 1472, 1474, 1476, 1478, 1480, 1482, 1484, 1486, 1488, 1490, 1492, 1494, 1496, 1498, 1500, 1502, 1504, 1506, 1508, 1510, 1512, 1514, 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3840, 3842, 3844, 3846, 3848, 3850, 3852, 3854, 3856, 3858, 3860, 3862, 3864, 3866, 3868, 3870, 3872, 3874, 3876, 3878, 3880, 3882, 3884, 3886, 3888, 3890, 3892, 3894, 3896, 3898, 3900, 3902, 3904, 3906, 3908, 3910, 3912, 3914, 3916, 3918, 3920, 3922, 3924, 3926, 3928, 3930, 3932, 3934, 3936, 3938, 3940, 3942, 3944, 3946, 3948, 3950, 3952, 3



Surgents (Lieutenant) John J. French (Right) and J. H. Macdonald (Left) in the Hospital, Singapore, during the Japanese Occupation. The man on the right is Surgeon (Lieutenant) John J. French, who was promoted to Surgeon (Lieutenant) in 1945. The man on the left is Surgeon (Lieutenant) J. H. Macdonald, who was promoted to Surgeon (Lieutenant) in 1945.

ROYAL NAVAL MEDICAL AND DENTAL OFFICERS

APPOINTMENTS AND PROMOTIONS

*As Surgeon General
in the rank of Surgeon Vice Admiral
on 1st August 1954
A. L. Russell OBE*

*As Medical Director (General) (Health)
on 1st August 1954*

Surgeon Rear Admiral A. King OBE

*As Medical Officer in Command
Royal Naval Hospital, Gibraltar, 27 May 1954*

*Surgeon Commander T. H. Shepherd
on the Army rank of Surgeon Captain*

*To Surgeon Lieutenant Commander
J. D. McKinnon*

*To Surgeon Lieutenant
A. N. Brown*

*To Acting Surgeon Lieutenant
A. H. Grogan*

*Provisional Selection for Promotion
on 1st, 24 December 1954*

*To Surgeon Captain
G. M. Brown*

*To Surgeon Captain (SA)
A. N. Brown OBE*

*To Surgeon Commander
J. P. Green, C.D. (Hon.) N.P.F. Corps
Provisional Selection for Promotion
on 1st, 24 June 1955*

*To Surgeon Commander
N. P. J. Smith M.B.E. (Hon.) N.P.F. Corps*

BRIEF QUALIFICATIONS

*Surgeon Commander M. R. Day — MBChB
Surgeon Lieutenant Commander J. J. Dunnington —
FRCR (Gen.) FRCR (Med.)*



Signature being made. A. H. Baxby CBE signing the V.C. for Sir John C. Cook, at the conclusion of his service in the Royal Naval Medical Staff School on Wednesday 14 January 1984 while Commander G. Warburton (below) as Chief RNMPs looks on.

QUEEN ALEXANDRA'S ROYAL NAVAL NURSING SCHOOL

APPARITION

Inspiringly Nursing Officer A. A. Perch GRENSE has reported COMBIBELANT's contribution for the necessary humanity and care which she has carried out her station in the Nursing School in the COMBIBELANT medical centre.

APPOINTMENTS AND PROMOTIONS

The Junior Nursing Officer
C. A. Gahan C. J. Dyer P. M. Hainsworth
P. A. Breen

NEW ENTRIES

Nursing Officers V. A. Stevenson S. L. Griffiths
A. S. Christel

ROYAL NAVAL RESERVE

NEW ENTRIES

Probationary Surgeon Lieutenant M. S. B. Edwards —
Plymouth

RETIRED

Surgeon Lieutenant Commander G. M. Holford —
Dulwich

Surgeon Lieutenant Commander C. M. Wilson —
Bristol

Surgeon Lieutenant Commander A. P. Griffiths —
Barnes

Surgeon Lieutenant Commander G. D. Gurnall —
Barnes

Surgeon Lieutenant A. R. Lallywhite — Plymouth

RETIRED

Surgeon Lieutenant Commander J. M. Chapman RD —
Weymouth

Surgeon Lieutenant Commander J. M. Hutchinson
RD — Plymouth

Surgeon Lieutenant Commander A. S. Campbell —
Dulwich

The National Ex-Prisoners-of-War Association

The National Ex-Prisoners-of-War Association, formed in 1946, will celebrate its 38th anniversary on 21st October 1984. All active ex-P.O.W.s, friends and relatives are welcome.

Further details are available from:

Mr C. Legg

14 Norfolk Road

Weymouth

Dorset DT98 4RD

Frontispiece



Master at Sea with HMS *Despatch*
Principal Nursing Officer C M Taylor RSC GRMS. Master at Sea GRIMES visited HMS *Despatch* at sea in pre-deployment status 30 June to 1 July 1994. Staff pictured here considering plans for the Medical Organisation for *Despatch* with the Principal Medical Officer, Surgeon Lieutenant Commander M J Matthews and Leading Medical Assistant JOs D Madhoo. During his visit of the ship PMO Taylor witnessed flying operations and was struck by the energy during "Band Party" on the deck.

Updates

DCS 15

Following the Summer edition outline of Defence Civil Study recommendations, a further update on progress is appropriate.

Since the formation of the Defence Medical Service Study Management Team (DMSMT) in early Summer, progress has been such that its various working groups, driven by an action plan which imposed tight deadlines, will have completed the majority of the DCS 15 implementation work by 1 April 1986. The formation of the secondary care agency is being pursued by DMSMT in conjunction with the Framework Team which will clarify the principles and key relationships required to underpin the creation of this agency. The next major milestone will be the selection of the Civil Executive (CExec) — to be in post by next Summer and take the project forward to the Agency launch in 1986.

It is intended to fund a new MEDIC, based on the DCS 15 model, to complement the Civil Service Hospital at Harlow (the DCS40) and an expanded DCS40 Clinic at, in October 1986, the DCS40 Clinic Hospital, in a defined geographic area of the highest Service population density registered as critical in January 1984 (M440). The local defence personnel (civilian) employing within the next few months. Populations in DCS40 are increasing and a dual Service level operation is being studied to ensure it meets our requirements. There is now a formal closure plan for RMA Plymouth and the DCS40 RMA417 is expected to be completed in time. The Vice Chief of the Defence Staff, Admiral Sir Jack Miles, will open the flag formally on 12 April 1985. The closure plan for CMB Alverstoke and PEARLHARBOUR Wharfedale are well advanced and civilianisation-related with will ensure the smooth transfer of care provided for civilians. Initially Harlow will take both the Service generalist and many of the Army(RAF) medical staff as these two hospitals are closing.

In addition to the various relevant working groups the 10 Service Operating Bases are making a major contribution to the efficiency and improvement of personnel and also the Secondary Civil Agency. There is little doubt that the spirit of Harlow in 1986 both for training opportunities available in the MEDIC will be



the help from private a more challenging and rewarding opportunity.

The training of all medical nursing and paramedical staff will be coordinated on a joint Service basis within an Agency headed by the Treasurer (Gen. West), on consultation of current educational courses is underway and DMSMT is recruiting a number of staff, including Harlow 1986 and Knight Harlow for a headquarters.

A working group has been set up under the chairmanship of a Colonel of Defence Medical Services who is tasked to produce an agreed structure and corporate plan for the Defence Medical Service Agency (DMSA) with a target launch date in late 1985. The debate regarding the location of Primary Care at central London is now over and the long term aim is the provision of both Primary Medical and Dental Care in Harlow.

It is evident that apart from the regular reinforced manpower request to deploy in support of the National Contingency Force and further operational medical support such as follow on forces will have to be provided from the Reserves both regular and voluntary. A review of all Reserve establishments is now underway to provide a central reinforcement base.

At a recent conference which included every operational deployment, it was clear that similar studies were underway amongst all major military nations. Ship, shore and hospital elements of a complement were being reviewed against a background of reducing resources. Capability and readiness studies were being conducted to ensure that the Reserves could maintain an example was that of the USN hospital at Newport

which had closed and a joint partnership entered into with the local civilian community hospital. It was reported that this new arrangement had received the highest physician satisfaction rating.

Clearly throughout the implementation period which involves novel and complex arrangements we cannot afford to bring out funds to develop our military forces every proposed solution has rather well together to make the very best of a situation which places the emphasis on our involvement with the front line capability. We must look forward to closer ties with our colleagues from our sister services in the UK and also with our allies overseas in the new political relationships that are developing.

A Craig
 Surgeon Rear Admiral
 Medical Director General (Naval)

Of practice, policy — and patient care

During the past three months I have been able to visit some RNAsOs, sit via on board HMS *Ironhorse* and HMS *Northumberland* as well as the medical branch staff expressing their war aims via board RAF & Royal Air Force medical systems subject at Sandown Camp near Dover.

While at sea, I was able to see for myself how well the RNAsOs had been accepted by their ships' companies for their professional and civilian roles and living standards. I was also able to experience a variety of transport from barracks there, via ship and shore again, and to wear a variety of most unflattering but required protective garments.

Having written in the last edition about QARNNS personnel, this time I shall update you about some aspects of practice and policy in RNH Herts, patient care planning and assessment is now assisted by ward based computer programs. You will note that I have not mentioned the actual care itself. That, you will be pleased to know, is still carried out by human beings.

The setting of standards is nursing care and the measurement of its quality, are ongoing features which allow objective analysis of all aspects of total patient care, including the identification of improvements and resources required and confirmation that improvements has, or has not, been achieved. All staff are involved and we now consider that standard setting and quality measurement in nursing are very useful tools in managing and improving patient care. Mindless in any, we also involve the patients and their relatives in the assessment process by asking for their opinion of the nursing care provided, to ensure that we are really providing the care the patients require in the way they require it.

Much effort continues in the working groups to enable the implementation of the proposals of the Defence Units Study and the Medical Services. As may be imagined, the completion of devising their nursing intradepartmental standards, clinical practice, service roles, conditions of service and Discharge Allow with Regional and District Health Authorities



care provision is extensive — as is the task itself.

While QARNNS personnel are highly motivated professionally, there are naturally all concerned about their future within the Service. Despite the many studies, reviews, surveys and proposals there are considerable reasons for the definitive information from MODON and myself as soon as it is available. Most certainly we will make the best use of the resources available to us in order to provide for the needs of the Service interest and about health occasionally need in 1985.

C. M. Taylor RRC
Principal Nursing Officer
Medical in Chief
QARNNS

Caring for "Blue Jackets' Teeth" into the 21st century

22 January 1994 will see the 75th Anniversary of the Royal Assent of the Admiralty Order in Council which approved the establishment of a permanent Royal Naval Dental Service. The Admiralty formally recognised the Navy's need for dental services in dental support which had been identified thirty three years earlier by Staff Surgeon (Christopher Harvey) at the Report to the Medical Director General entitled the "Blue Jackets' Teeth". This need was confirmed by experience within the Fleet during the intervening years, especially during the 1914-1918 war and continues to this day. It is still one that is best met by a dedicated, well-qualified and accessible Dental Service, well adapted to the Navy's particular and sometimes circumstances and handling with operating alongside the Fleet and Royal Marines within the maritime operational environment.

The first half of the century has seen three significant changes in the management structure of the RNDG, largely as a result to government initiatives following the demise of the Warship Fleet, and a reduction in Naval strength related to an over-riding policy of value for money. The implementation of the Prospect Proposal reorganisation earlier this year radically altered the structure of the Surgeon General's (in Service) Dental Directorate (preposed by Sir Henry Villiers in 1983 which at first served, but served the three single service dental branches well. Now for the first time the Medical Director General (Naval) department is based out of London and the opportunity that this move would provide was recognised by the Dental Committee back in 1990 and used for a significant reorganisation of the Service's management was seen from this Agent.

Experienced Whistling Warships were not surprised however to learn that a government related reorganisation was being processed through the medium of the 1994 Defence Cost Study, even before the Prospect proposals had come up being. This study suggested that there was little scope for savings in the provision of dental care to the Armed Forces, but it did indicate that there was scope for greater reorganisation, as a 10% Service team, plus daily visits to most of training and command establishments of landwards. To this end it recommended that priority dental care be



maintained at 4 Agency sites, and that we are underway just again. This work is currently in finalised capacity in line with the government's overall policy for all MOD support services to continue for Agency status providing their functions are required and they are not suitable for contracting out or privatisation.

As a result it is possible subject to ministerial approval that a Defence Dental Care Agency will be launched before the end of 1994. Individual service branches will continue to co-ordinate with the DDCB Executive relations and the provision of dental and maxillo-facial care in the second and third line will continue to be provided by volunteer personnel especially to the deploying force. Dental career and opportunities and personnel responsibilities will align with the single services. There will be little change in everyday dental level but undoubtedly the dental branch will be subject to greater budgetary accountability and hopefully will be rewarded with more "in house" control than is possible today.

All this should give strength to the provision of the Navy's dental care and as to be reorganised

in 1976, 97.1% of working women the actual earnings were as one should expect the fact that the rate of the 8.9% share continued to be in practice and measure a level of work flexibility and incentive that the operational efficiency and effectiveness of the Royal Navy and Royal Marines is not improved in practice in 1994. And to support the operational medical effort whenever that is required.

As one form of office duties to ensure that the fact that we will continue to fulfil these aims, we will continue to have a focus on the fact that the Royal Navy and Royal Marines is not improved in practice in 1994. And to support the operational medical effort whenever that is required.

There have been a number of changes that the Royal Navy has had to make in order to ensure that the Royal Navy and Royal Marines is not improved in practice in 1994. And to support the operational medical effort whenever that is required.

T. J. C. Hall

Supreme Commander (C)
Director of Naval Dental Services

"The most important single factor"

Given the scope of the changes that the Royal Navy has had to make in order to ensure that the Royal Navy and Royal Marines is not improved in practice in 1994. And to support the operational medical effort whenever that is required.

As the Director of Naval Dental Services, I am charged with ensuring that the Royal Navy and Royal Marines is not improved in practice in 1994. And to support the operational medical effort whenever that is required.



However, the changes that the Royal Navy has had to make in order to ensure that the Royal Navy and Royal Marines is not improved in practice in 1994. And to support the operational medical effort whenever that is required.

It is important that the Royal Navy and Royal Marines is not improved in practice in 1994. And to support the operational medical effort whenever that is required.

Under the provisions of the Royal Navy and Royal Marines is not improved in practice in 1994. And to support the operational medical effort whenever that is required.

major and complex. Sea and shore conditions of service Naval Chaplains. Discharge/paternity and the duty to duty management, including standards and priorities in the Regulatory Branch. I make a big business to say in trust with the views of the individual and am able to back these views with Navy wide statistics from ComNavs, the Continuous Attitude and other surveys. Basically anything which affects people apart from recruiting, training, discipline and the standard professional work is of concern to DPMG. I headed Sea Lord's Personnel Liaison Team, which works to me, ensure that I have a clear and in date representation of the mood of the people. This stage of activity gains me the clearest possible 'pulse' of the personnel factors affecting the Royal Navy.

While everything around us seems to be changing, we need some framework within which we can manage our conditions of employment. This is provided by the Second Sea Lord's Personnel Framework Standards (PFS) which sets down the standards and guidelines for the management of our people in the Royal Navy. I called the feedback on PFS for the Second Sea Lord. I initially designed as a Staffs. Chapter. PFS are proving a very useful instrument of and a degree of protection against the corrosive effects of reducing resources on conditions of service. We need, most of all, we will claim that conditions of employment up, not changing, they are throughout the century. Redundancy pay limits, reduced resources and the ever increasing demands for improved efficiency inevitably increase stress and strain. The Services are in a difficult phase of restructuring too, and with Defence Civil Studies one every aspect of our business: the Personnel Review and the Independent Review of Pay, Allowances and Conditions of Service. It is well known that for some time to come that it goes with PFS we know what Conditions of Service that provide us. We have a goal.

The Navy Board may aware of the issues and that our changing being improving married communication is a very high priority, but as much of the change has to be approved by Ministers and announced in the House of Commons, then inevitably the process, this

obliges to broadcast the information before we can. Moreover, we are pressing hard to ensure that the Navy at large shares of developments. Navy Life, which is published on time by DPMG, is targeted at Senior Staff and Operational Officers. It aims to keep our middle managers abreast of developments from a personnel perspective.

I would be the first to admit that quality of life is not as good as I would like. Inability to plan important professional projects and frustration with the operational chain over our apparent inability to manage people as well as we would wish, are the major causes of dissatisfaction. I use this information to persuade the central policy makers to modify their less palatable efficiency measures. However, I have to say that in the current RAN conditions of resource, compromise in the medium term, pay allowances and quality of life will have to be clearly weighed a price of stability against growth, standard and personnel programs approved of PFS is not to not to unacceptable levels again.

My staff are working hard to deliver what we believe you want and the Navy can afford. You can also help. PFS were designed as a statement of the Navy's commitment to its people. If you are an Officer or Senior Staff you should be aware of the standards of personnel support which are set out in PFS and which the Navy measures. If its working as our plan being met, I encourage you to report this fact regularly. It is only through your reporting that we can project what the Navy Board considers to be the maximum service conditions requirements and therefore quality of life.

It is my job to represent your interests to the Second Sea Lord and others, with my colleagues that in the Navy changes we manage a system which can attract and retain sufficient quality people. It is the Service Command, Staffs, Commanders, Commanding and Operational Officers duty to ensure that within the resources allocated we provide a worthwhile, challenging and rewarding career in which we can all make a positive contribution. People make the most important single factor.

Stephen R. J. Jenkins MBE
Deputy of Naval Service, C-in-C-HQ

Debating point

ATLS — Essential training for Naval medical officers?

C J Cahill

THE HISTORY OF ATLS

The Advanced Trauma Life Support Course was developed in the United States of America in response to the recognition of the world-wide inadequacies of trauma care within that country. The provision of care was before 1980 inconsistent and there were no nationally agreed standards for trauma care or for training of doctors in the initial management of trauma. In 1976 a Norwegian surgeon created his 'light aircraft' with his family (colloquial: his wife was killed instantly, he was seriously injured and three of his four children were critically injured in the accident). The moral was that they received very poor and piecemeal the surgical care that

"When I can give the happy exit to the field with limited resources that when the children and I recovered at the primary care hospital, there is something wrong with the system and the system has to be changed."

His wife, with the help of colleagues in Norway, published the concept of an advanced trauma life support course. A first local introduction in 1978, the course was modified and taken up by the American College of Surgeons (ACS) in 1989. The program has grown steadily and has been accepted in many countries world-wide, but always under strict quality control standards imposed by the ACS. The course was exported into the UK in 1988 by one who trained in the USA and where the number of courses has progressively increased to over 500 annually in the UK. The core material is regularly updated to reflect changing practice (last update 1990) and there is now a significant UK input into the updating process.

THE ATLS PROGRAM

The Advanced Trauma Life Support Provider Course as prescribed by the ACS and administered in the UK by the Royal College of Surgeons of England (RCS(Eng)) is currently the internationally and universally accepted 'gold standard' in trauma training for doctors. It provides a safe system for care of the severely injured, which works. It is not the only method of managing these patients but an efficient and proven discipline which suggests that it is a sound system. It is not a cook book with an answer for every situation and does not ensure the best for good clinical skills and judgement, but it does impose a rigid framework for management.

The program is only for qualified medical practitioners, although there has been a recent expansion in training other professional providers to ATLS provider status. Prior to this expansion the only non-paramedic involvement has been as observers who do not qualify for provider status although they do substantially benefit enormously by the experience due to having gained familiarity with the principles of trauma care that are taught.

The ATLS course is based on oral rather than written trauma, however, due to its origins in the USA there is significant time invested on written injuries and penetrating trauma and the effects of adverse conditions. The course is held over a two and a half day period and consists of a program of lectures, materials, practical skill sessions and simulated patient management. It is based on primary resuscitation principles and is essentially didactic. Criticism is granted only when the candidate has successfully completed the whole course, passed the MCQ test and demonstrated further ability to undertake the immediate care of a severely injured casualty.

Surgeon Commander Cahill is a Consultant in Accident and Emergency Medicine at Royal Naval Hospital, Haslar.

ATLS IN THE ROYAL NAVY

ATLS training was first introduced at the Institute of Naval Medicine (INM) in January 1983. The first course was organised by the then Commandant Admiral in Accident and Emergency Medicine and supported with the help of the advanced Life Support Group from Manchester. It was held with the approval of the Navy but without official recognition. It was therefore self financing and succeeded in providing the Navy with candidates and observer places at a substantially lower cost than sending individuals to courses elsewhere in the country.

The undoubted success of the first course resulted in the holding of INM's first running ATLS course for the Royal Navy and it was nominated as the course director. It was agreed that it was important that the course should not be seen as being introduced and in fact not a progression of the candidate should be created and that approximately 80% of the teaching faculty should also be created. The latter was a requirement already in the Navy but and will have insufficiently trained ATLS practitioners and the former with teaching and in all instances public relations benefit to the service. The first official course was held in July 1983 and further courses have run successfully in January and July 1984 in addition to a satellite course run by INM for the Royal Naval Reserve in September 1984 during its RNK training camp.

RAFLS

The British Army Training Life Support Course or Battlefield Advanced Life Support Course (RAFLS) was developed by the Territorial Army in a short time and a half day as a multi-aim course for medical and para-medical personnel. It was and is still only regarded as providing an introduction to the management of trauma in a military context. Although based on ATLS principles throughout it was never intended to be a substitute for the ATLS provider status. RAFLS/ATLS is a very useful project due to the numbers and diversity of personnel that it trains. However, it must not be seen as an adequate alternative for full ATLS provider status in medical officer training.

THE FUTURE

ATLS has been accepted by the medical establishment in the UK and this is reflected in the introduction of certification as a pre-requisite into the postgraduate training requirements for surgery, orthopaedics, anaesthetics and accident and emergency medicine. It appears that ATLS provider status is going to be a pre-requisite for FRCS and FRCA candidates in the very near future. In addition ATLS has been widely accepted by clinicians of many specialties within the service as an essential element of medical officer training and the concepts have been integrated into medical personnel training.

I consider that it should become an aim of the Defence Medical Service, that all serving and reserve medical officers achieve ATLS provider status. This is clearly not going to be possible in the short term as a significant expansion of the ATLS program within the service will be required and will have to be properly resourced. There was present a shortage of some ATLS instructors in the UK, which makes expansion more difficult. However, the RN service has proved a popular one with civilian instructors than for it should however be a priority for medical officers in both role fulfilment, operational tasks and acute operations in secondary care. Over the next years a gradual expansion of the program and its resources is required.

It could be argued that because of its civil origins the ATLS course is not suitable for military training but I believe that the principles of trauma care are universal and that the core material is in relevant to the military situation as to the civilian. Particularly with the changing war role of the armed forces. A sound understanding of both products and medical skills is vital to coping with limited resources and viable resources. A disaster's confidence in deal with the very worst case especially when isolated. Any military aspects are covered by the course and easily addressed in other training and education.

I believe that ATLS is essential training for all Naval Medical Officers.

Operational medicine

Telemedicine — a paramedical and specialist tool

D. W. Oliver

INTRODUCTION

The US Army is currently running a Military Telemedicine Programme to support their forces in the Persian Gulf region (Operation PHOENIX HUNT). They have 364 US soldiers currently deployed in Iraq, as part of the overall United Nations deployment. Their system provides patient values high resolution still medical images, other digital medical data, fax and voice capabilities over a network primarily using INMARSAT telecommunications support, over a 36 hrs. It allows them to obtain uninterrupted communications between the medical officer in the field and a Consultant at Walter Reed Army Medical Center (WRAMC) when planning the medical management of their patient. This has numerous implications not only in helping the doctor in other situations by providing the best possible standard of care with the resources available to him, but also in reducing the number of evacuations from the field. In helping some of our soldiers there on a Royal Navy vessel the time of even our extended patients' return corresponds to the operational risk of the war. Telemedicine can give a patient a greater chance of surviving to stay in a theatre that appropriate casualty evacuation is kept to a minimum. It can be directed by the Consultant who understands the medical needs of the individual and the operational risk of this, and in which he is working. An over view of the system as a recent work is available. Further work on Telemedicine system using INMARSAT.

ORGANISATION OF THE US SYSTEM

The system deployed to Iraq plans involves the Forward Aid Station supported by a Consultant First Medical Officer's location receiving information from the Forward Outposts by delayed patient values still images, fax and voice from the Forward Aid Station located near Tikrit, the medical officer is able to communicate from the location to WRAMC using the Telemedicine system. As getting a further node is being installed at Latakia, the Army & Regional Medical Center thereby ensuring communication in the next phase of ground retreat. The first location can portable values fax and television equipment using a portable satellite dish via INMARSAT. The receiving location is wired to the local ground station using land telecommunication lines. It is essential that the receiving location has the facilities in order to improve the clarity and speed of the system. As each a two turned dollar is produced using voice communication. If one end of the system is not fixed, what is the other end is not satellite dish, the quality of image deteriorates and a six second delay is produced and is not acceptable.

HOSPITAL TELEMEDICINE FACILITIES

A Hospital Telemedicine system is used for consultation at WRAMC which also receives the fax and still images. The quality of digital images produced is of very high quality as patient delinquent images with lack of movement making the Consultant to see detailed images. Dermatology patients have been a particularly diagnosis, and have prevented several cases from being progressed from the field. Other systems such as X-ray and ultrasound are also able to be effectively done with from a remote location using Telemedicine support.

Raymond Lieutenant Oliver is currently supported in the Royal Marine.

THE CONCEPT OF OPERATIONS

The forward facility, in this first experiment, directly has medical officers as the forward consultant using the V4 4 line video and still images for consultation and advice and within the Medical Officer will communicate with Landstuhl and then if necessary to WOLMCC. The concept is that the lines of communication follow the level of care in the theatre. The medical facility that will be responsible for the next level of patient care have been identified as the decision making ground and advised the medical officers with the patient, in the most appropriate manner of treatment and need for evacuation. The US experiment has shown that both US MD and Consultant Advisor need to cooperate with the system so that a consultation can be made. From the final point of the consultation is the decision to transfer from there through a mechanism that can be taken at the theatre which may otherwise have been required. Both sides realise that operating a Telemedicine system can be far in advance of that achieved over the telephone and the need to ensure may be avoided. The operating down at medical decision may also be able to perform tasks that would otherwise had were beyond him if the remote experience of a more senior medical practitioner was not available.

ROLE WITHIN THE FOYAL NAVY

The experience of ground deployment has been a strong ground for the military applications of Telemedicine that could it prove suitable in another situation? Would it be useful in medical usage without a medical officer? There have been medical facilities and interventions in limited to relatively simple procedures. Experience to recent years suggests that there were very few instances in which Telemedicine would have been of medical assistance to them in managing difficult patients — though it might have referred them to some of the responsibilities of deciding whether the Consulting Officer should be advised to provide the patient.

Perhaps it would be better for Telemedicine to be added to the range of equipment available to Surgical Support Teams in One of Area operations. These Teams have a great capability for intervention and could need advice on patient care from appropriate consultants at the theatre. The idea of communicating if necessary may provide to use in critical situations.

The capital and installation cost of a set of the equipment is around \$100,000 and purchased in US. The cost is reduced markedly when an FMARSAT communication system is already available for other purposes. Appropriate consent equipment may already be required for use by clinicians who wish to send expert advice from base on the topic of sophisticated equipment. Running costs include provision of capital on the maintenance and insurance, to allow the operators at both ends to gain confidence and skill.

MEDICAL CONFIDENTIALITY AND LEGALITY

There is little chance of the Telemedicine communication being seriously interrupted in other than the receiving station. Should this happen then the designated receiving location will lose its image and signal therefore; the message will be immediately apparent. The legal aspects of Telemedicine are in the US experiment already covered by existing laws that govern the telephone advice given by specialists. The ideal was to avoid medical legal disputes involving patient care as to treat the patient as regularly as possible in such situations. This can only be achieved by Telemedicine.

It has perhaps been thought that individualised telecommunication systems were impractical in a tactical environment. The US experiment has shown that it is in fact quite suitable with the existing telecommunication networks and existing electronic systems with some modification. The major aim involved is that of the individual units and the telemedicine, more than to the ground station through the receiving location. Within the current economic climate of major in reductions and cost cutting Telemedicine may offer a real efficient way of ensuring that patient care is not compromised. Medical facilities could be enhanced especially during desert deployment and as such it deserves consideration.

ACKNOWLEDGEMENT

My thanks to Lt Col J Hagmann MD, US Army, for allowing me the US Telemedicine Project at Landstuhl Germany.

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Clinical management

Preparing to travel

A. R. O. Miller

INTRODUCTION

More than 30 million overseas visits are made annually by British residents and increasingly short durations are becoming increasingly the majority of people who travel to developing countries are tourists but other groups include business travellers, military personnel and foreign aid workers. Most travel is Europe and other so-called developed countries, control is easier and risk to health is lower. In contrast, travel to southern and over-seas regions is less controlled and varied infections in many countries require more care before travel related illness and suggests the need medical assistance. When analysis of developed countries, travel is less well developed countries not only does their risk of injury increase dramatically but so infection they are at increased risk of infection.

TROPICAL HEALTH - THE VICIOUS CIRCLE

Illnesses that are consistently regarded as tropical diseases are largely caused by organisms and in fact travel itself is the primary and definitive mechanism of developing countries due to the worst disease set is. This is illustrated in Figure 1. Primary causes malnutrition, malnutrition causes susceptibility to infection and infection leads to worse poverty and also directly to increased malnutrition.

In addition to these problems there is the effect of the environment itself. Contaminated water and insects for the travel and risk of infection have a life cycle that is at least in part dependent on a particular environment temperature and therefore



Figure 1 The vicious circle

these infections can only be maintained in the tropics.

The average Western tourist returning to a developed country is neither malnourished nor poor and therefore his major risks relate to exposure to the high levels of disease and vector borne infections as a result of the factors outlined above.

THE PRE TRAVEL CONSULTATION

A pre travel consultation is usually regarded as no reason for being given a list of 'jobs' that in practice for most should be avoided. The most important aspect is to report information to the clinician designed to identify the individual and reduce risk of preventable disease. The most areas in which to concentrate are identified as risk food ingestion, mosquito exposure, bites and avoiding high risk sexual contacts.

Supervising Consultant, Tropical Medicine, University of Hong Kong, and Consultant, Tropical Medicine, University of Liverpool.

The second rule is to advise on appropriate vaccinations and rational prophylaxis and finally to advise on medical supplies for self-treatment.

VACCINATIONS — "MYTHS AND MAGIC"

Which suggestions advise is given about vaccination. One well established axiom from all risk-rare diseases (including AIDS) is to be vaccinated against chicken pox, measles, mumps and mumps and mumps (rubella) before these diseases are more widespread in Asia and mumps (varicella virus etc.). I shall discuss the more controversial vaccines in some detail and give general guidelines on vaccine administration. Much advice on vaccine policy is derived from empirical observation, more or less based on good trial evidence.

Smallpox. This viral illness no longer exists in the West, hence eradicated by the World Health Organization (WHO) international programme. The last endemic case was in Somalia in 1977, since, with two laboratory infections in 1978, and a 1979 WHO declared that it no longer existed. However, smallpox has not been proved not to exist yet, and it is the armed forces have now stopped vaccinating.

Measles. is a closed illness caused by the capture of Chlamydia virus. Administration of vaccine raised substantial moral problems (including vaccine that are prepared should the need soon be manufactured. This is one of the childhood vaccines and both guidelines' recommend that if an adult has received live or more doses than no further boosters are required. My own feeling is that any adult travelling to a developing country who has not had a booster in the last six years should receive one prior to travel because if he contracts a measles virus second while overseas, there may be some concern about receiving a booster dose within the world's borders.

Polio. This is an occasional infection which despite the efforts of WHO remains endemic in much of the developing world although it is generally deemed to have been eradicated from the Americas, Europe, North America and South America. The virus is mainly spread by the fecal-oral route and there are two available vaccines. The usual form of vaccine is the oral live attenuated vaccine (OPV) but there is also injectable inactivated virus (IPV) which may be more appropriate in certain circumstances. Travellers who have not received a booster dose for ten years should receive one prior to travel.

Yellow fever. is the only vaccine for which WHO maintains an international certificate of vaccination. It is an infectious infection and does not occur anywhere in Asia. It is a significant risk in sub-Saharan Africa and South/Central America and anyone travelling to an Asian country from a designated infected area will have to show a valid certificate. Those travelling to any Asian destination from the West do not require either vaccine or certificate. The vaccine is a live attenuated virus and therefore can interact with other live viruses, and should not be given to the immunocompromised. Nevertheless it is extremely safe with few side effects, high protective efficacy and producing long lasting immunity. The certificate is valid for 10 years and remains precise for a less than long.

Typhoid fever. is caused by infection with *Salmonella typhi* which is a fairly easily spread organism. The old vaccine was called TAB (typhoid, adenoid, bacillus) and it provided some protection against paratyphoid A and B as well as typhoid. However it was felt that most of the side effects of this vaccine were due to the A and B elements and a purified pure preparation against typhoid. Paratyphoid is probably a slightly less significant disease than typhoid and therefore no vaccination against this is currently available. There are three vaccines available against typhoid.

Whole cell vaccine. is given as two doses, separated by four to six weeks and provides 70-80% protection for approximately three years. Side effects consisting of fever and soft stools are not uncommon, and can be reduced by giving aspirin and all subsequent booster doses in a smaller amount by the intradermal route.

Typhoid Vi vaccine. This is a preparation of the capsule of the bacteria and is given by intramuscular or subcutaneous injection in a single dose of 0.5 ml. The duration and degree of protective efficacy are similar to the whole cell vaccine but there are said to be fewer side effects.

Oral typhoid vaccine. is a live vaccine and is given as three doses at shortest days. It must be kept cool. In cases where side effects from the parenteral vaccines has there is some doubt as to whether the protective efficacy is superior.

Typhoid has been eradicated from India and the armed forces and the absence of requirement to keep personal records for that typhoid has led to a rise in the degree of over vaccination. Another myth perpetuated by the Indians is that they

is not recommended for vaccination after the age of 15. This is because by that time most individuals had reached that age they had been or were vaccinated that they entered school a significant risk of infection occurred.

Hepatitis A is an acute viral infection that is endemic in developing countries. Until recently the only method of protection (other than being careful with food and water supplies) was passive immunization with human normal immunoglobulin (HNIG) which would protect for up to six months depending on the dose given. An uninfected vaccinee is seen as a child that will give active immunity. A single dose of Havrix would still give protection for several years and if a booster dose is given at age 10 or 12 months this immunity is prolonged for up to ten years.

Cholera is another acute viral infection leading to a profound secondary diarrhoea. There is no significant risk to the ordinary traveller and the vaccine is relatively ineffective (approximately 50% protection) and short lasting (at best, months maximum) it is therefore not recommended. Although WHO recognizes its lack of safety and reliability all governments for vaccination in 1979 some countries will occasionally demand to see such a certificate. As the vaccinee has no safety or immunological health experience it remains a partially acceptable to enter one without vaccination if transfer of liability is to be protected.

Shigellosis is an infection that can be acquired anywhere in the world but the chance of acquiring the infection and developing severe disease are probably higher when visiting countries that have frequent epidemics. Shigellosis is a common disease in the UK is caused by Group B shigella for which there is no effective vaccine. However epidemic disease in sub-Saharan Africa, the Middle East and the Indian subcontinent is generally caused by Group A shigella for which an effective vaccine is available. There was a particularly severe epidemic amongst pilgrims travelling to Mecca for the Haj in 1977. It seems sensible to offer monovalent vaccination to travellers to the Haj like Saudi Arabia (not on their) to the surrounding belt of sub-Saharan Africa (particularly in the summer season from December to May) and to visitors to Nepal (because of close contacts with locals and sometimes those agents involved). It is advised against repeat vaccination for a long time if an

epidemic wave would be, i.e. to have been vaccinated. The vaccine is, however, after a single dose and protection lasts for about three years.

Rabies is a viral disease spread by animal bites and is a major cause of mortality throughout the developing world. There is no data for established infection but administration of vaccine after exposure and before the virus has penetrated the central nervous system can prevent the infection (post-exposure prophylaxis). Those who have had pre-exposure prophylaxis and suffer a bite where there is a significant risk of rabies should have post-exposure prophylaxis in addition to pre-exposure prophylaxis cannot guarantee protection. Therefore there is little point in offering pre-exposure prophylaxis other than to those at very high risk (voluntary workers) or those who would have a significant delay before they can receive post-exposure prophylaxis (overland airways travellers). The vaccine is given in three doses of 1 ml each intramuscularly on days 0, 7 and 28. It can also be given on 0, 1 and 28 alternatively in the same manner (although this dose is not recommended if the response is taking observations which may attenuate the second response).

Japanese encephalitis (JE) is a mosquito-borne infection, which is endemic in Southern India and Southern Nepal and the Far East. The time of infection to clinical illness may be as long as 1000 days therefore those with clinical disease have a severe time clinical of dying and further are in the class of developing neurological sequelae. The risk of infection is important is thought to be low however vaccination only recommended to those travellers staying in rural unhygienic for more than one month. The dose is 1 ml on days 0, 7 and 28 with a booster at one year.

Tetanus is a bacterial infection that is found in Southern Europe and Scandinavia. Vaccination is only advised for those who have a particularly high risk of exposure.

Other vaccines Travellers who are intending to live in the developing world should have had BCG at some time in their lives to reduce the chances of contracting tuberculosis. Epithelium vaccination (see dose schedule without a guide) can be given (which is not) is suggested the third vaccine when primary childhood

immigration was more than 100 years previously and who are going to live and work both local residents in Russia and Ukraine. Warriors are not yet available for malaria vaccination. HIV, which is usually transmitted through sexual intercourse, is also a risk but they are under stress developing for some of these conditions.

MALARIA

Malaria kills over a million people a year in Africa alone. Every year about 200 cases are imported into UK, mainly from sub-Saharan Africa and the Indian subcontinent. There are usually between ten million deaths from malaria in UK per annum. The only form of malaria that kills people is caused by the parasite *Plasmodium falciparum* and that is mainly an African problem although it has been increasingly recognized as important in the Indian subcontinent. *P. falciparum* is generally resistant to treatment or prophylaxis with chloroquine. Other species of malaria parasite are generally chloroquine sensitive although there is some resistance amongst *Plasmodium vivax* parasites in New Guinea.

Distribution

When discussing malarial prevention, with travellers, it is assumed that in countries you where they are going in order to assess their risk of exposure. The main area of concern for travellers from UK remains East Africa where *P. falciparum* has been highly resistant to chloroquine for many years. There is increasing resistance to chloroquine in West Africa even so that the whole of sub-Saharan Africa should be regarded as high risk. In North Africa and the Middle East there is little malaria at the moment but in the Indian subcontinent with the exception of peninsular areas there is a significant risk of malaria. The majority of the concern due to a foreign species (*Plasmodium vivax*) has there is increasing chloroquine resistance *P. falciparum* now reported in South East Asia the risk is very poorly well understood areas very much in Bangkok, Puerto Placer and Chongqing being said and from the outbreak in the Thai/Chinese border having a high risk of some resistant *P. falciparum*. India and Singapore have no malaria and Bali and Hong Kong have no significant malaria. Carry this risk in remote areas. In Latin America there is chloroquine resistant malaria in the Amazon basin but for most other areas there is little risk.

Preventative advice

Whatever area is being visited, the principles of malarial prevention are the same and are listed below:

1. The essential principle is to limit exposure to mosquito bites as far as possible. This means using repellents, wearing long sleeved shirt and trousers in dark and warm areas, preferably impregnated with repellent. Limiting mosquito exposure also reduces risk of other infection with various and protozoa.
2. Take regular chemotherapy to prevent.
3. Remember that any fever is serious and after return should be regarded as malaria until proved otherwise. *P. falciparum* is only a risk for about eight weeks after return from an endemic area.

Chemotherapy

This remains highly controversial and is a rapidly changing subject. No chemotherapy is used against *P. vivax*, which is not a threat for all areas of the world and the principle must be to balance the risk of malarial infection from the chemotherapy against the risk of continuing infection. Up to date with accurate information must be sought prior to allowing travellers to the advice may differ considerably for different areas of the same country. Such detailed information is beyond the scope of this article but as a guide the appropriate regimen is determined by the risk of infection and the incidence of resistance to chemotherapy in the areas to be visited. Thus in broad terms:

- a. Areas where there is very limited risk of malaria. Here the individual is advised not to take any chemotherapy but to limit mosquito exposure and to be on the alert for signs of malaria. In some circumstances they may be advised to carry stand by treatment if they develop a fever. Areas where this would be appropriate include North Africa, some parts of India, Egypt, Turkey, Sudan and other Central American areas including some rural areas of Mexico.
- b. Areas where there is little chloroquine resistance. The traveller is advised to take either weekly chloroquine (500 mg) or daily proguanil (200 mg). The applies to Iraq, Egypt, Turkey, Sudan and other Central American areas including some rural areas of Mexico.
- c. Areas where there is significant risk of chloroquine resistance. Here travellers would generally be advised to take either chloroquine and proguanil in the form of

down, or otherwise, to take 250 mg of metoprolol three times daily. The latter regimen is more effective and for cases of very high grade diarrhoea (sometimes such as occur with Salmonella Adona) would be preferable. However, there is still some concern about the metoprolol-induced side-effects from metoprolol. There are rare and usually acute after about three doses of the drug. The chloroquine/proguanil regimen is generally well tolerated although compliance with daily proguanil may be poor. It is advised for most of the Indian subcontinent.

TRAVELLERS' DIARRHOEA

Travel involves the mind and leaves the bowels open to any of the more frequently quoted openings for infection: diarrhoea (TD). There is no doubt that TD causes significant morbidity. There is an overall attack rate of about 40% in those visiting developing countries. 80% are confined to bed and 40% modify their travel plans. There is considerable variation depending on the destination: the Indian subcontinent, Africa and tropical America are regarded as high risk, with an attack rate of up to 90%. Southern Europe and the Middle East are regarded as medium risk at 10-20% and travel alone carries about a 5% risk.¹

Clinical picture

The illness presents as diarrhoea within two weeks of arrival and associated if it usually is self-limiting problems involving within a week duration of few days. Nausea and vomiting, fever and blood in the stool are not infrequent. The diarrhoea is usually watery implying that it is of secretory (toxin) origin, but sometimes it can be mucous, as in enteric agglutinating *Shigella* species. The diarrhoea may also present sometimes as acute dysentery with blood and mucus. This means that there is a colonic process present.

Aetiology and management

A large number of enteropathogens can cause TD (Table 1). Presumably a causative organism is not identified but sometimes more than one (pathogen) is present. The principles of management of TD are:

1. Rehydration
2. Anti diarrhoeal agents
3. Anti secretory agents

Much of the morbidity of TD is related to the management of dehydration. In more severe diarrhoeal disease (eg cholera), the severity is always due to dehydration and can be managed by adequate rehydration. This can generally be achieved with oral rehydration salts/solutions (ORS) which are glucose/electrolyte solutions that can be absorbed across the small bowel wall even if a narrow secretory process is taking place simultaneously. Intravenous rehydration is only required in individuals who are shocked or vomiting profusely. In most very dehydrated and shocked patients, intravenous access may not be possible and it is necessary to find alternative means to the rehydration by administering fluid intramuscularly (usually succinylsucrose) or subcutaneously. It is vital TD is given appropriate fluid to avoid dehydration, fluid not just fluid intake with additional water in such drinks. However, if they are becoming dehydrated then one of the proprietary ORS fluids, eg Dextrosol should be used.

There has been considerable controversy over the use of antimotility agents in the treatment of diarrhoeal disease. There has been some suggestion that they may precipitate toxic colitis but this concern has principally based on one paper linking an experimental bacillary dysentery² and subsequent clinical work have shown antimotility agents to be safe, effective and well tolerated.³ Their main role is symptomatic relief of those severe diarrhoeas caused and by the frequency of bowel action. They should probably be avoided in patients who are very sick, or have bloody diarrhoea although

Table 1 Common pathogens in travellers' diarrhoea

Enterobacteriaceae: E Coli (ETEC)	Acetivibrio
Enteropathogenic: E Coli (EPEC)	Campylobacter
Enterotoxigenic: E Coli (ETEC)	Campylobacter
Shigella	
Salmonella	
Campylobacter	
	Clostridium
	Cryptosporidium
	Isospora
	Parvovirus

there is no good evidence to show they are dangerous under these circumstances. Loosened is the recommended agent as it has been the best studied. It avoids the potential acute danger of diphtheria (in Lincovis) and in addition to its antimotility activity it has an antemotility action that is of at least theoretical benefit. There are well defined bacteriological indications for using antimotility agents in TD (Table 2). In fact all cases of bacteriological diagnosis are rarely established in time to be of clinical benefit so prophylactic clinical guidelines

Table 2. Guidelines for which antibiotics may be appropriate

ETEC	Clostridia
Shigella	Chlamydiae
Salmonella	Amoebae
	Candida

are required. If the patient is at the extreme of age they may be more vulnerable to the effects of dehydration. If they have a community-based disease in HIV infection then TD can be more serious and lead to complications and if they journey to rural areas there are relative indications for early antibiotic treatment and it is these people who should be treated with antibiotics and appropriate advice on self-treatment. If the diarrhoea is very severe in Mucosa, or the patient is seriously unwell then antibiotics should be given. The drugs of choice are the quinolones as they are effective against all the common enteropathogens including salmonella, campylobacter and shigella. The most experience has been with ciprofloxacin and a recent study with Rifaximin in India suggested that even single dose ciprofloxacin is of benefit. Quinolones may not be considered as prophylactic antibiotics considered appropriate. If TD does not respond to ciprofloxacin then it may be that the person has giardiasis and should therefore be treated to give appropriate antimotility. Figure 2 gives a suggested approach to the empirical treatment of diarrhoea. This protocol was devised for the treatment of refugees and the WHO's travellers' and world antibiotic guidelines (200) may be for two days for the community.

The incidence of TD can be reduced by encouraging healthy eating habits. Only bottled water should be drunk. Salads and uncooked foods should be avoided and all fruit should be peeled.

OTHER PRECAUTIONS

Sexual, unconsented disease causes a significant problem for travellers and all should be advised to avoid sexual sexual contact and report symptoms promptly on return. They should be advised to use condoms if they cannot abstain and clearly all travellers should be reminded of the high risk of HIV infection in many parts of the world. Travellers to Africa should be encouraged carrying medical kits including malaria prophylactic tablets to be used on the event of their being involved in a significant accident. This seems a sensible practice but no traveller may be lulled by the fact that if a patient is involved in a serious accident there is no guarantee that the health care providers will use the same results. If such kits are taken abroad it is important either to take a reciprocal copy of the kit such as that provided by MASHA, or to have good documentary proof of what is in the kit. It is important to have a good medical kit in a developing country. If this is not available there is a significant risk of being taken for a drug addict or smuggler. Travellers should be advised not to swim in fresh water in the tropics because of the danger of schistosomiasis, not to swim around in bars but because of hard water, etc. and to have good insurance cover to allow for repatriation if necessary. Hopefully after your consultation they will still want to go and they will be better prepared.

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A tropical experience

S. J. Turner

INTRODUCTION

Having completed my tour on HMS Africa, I found myself with an extra hour before leaving BPSB Plymouth for immediate posting. As Recife is a straight-on to Manaus, Brazil is the route. I decided to spend one hour exploring the Amazon region. Rapidly developing a very personal interest in tropical medicine, with the help of the British World Anarch (I made contact with the Hospital for Tropical Diseases and the Alfredo da Matta Institute in Manaus, a tropical dermatology hospital) in Manaus, where staff agreed to let me spend some time in various clinics and on the beach.

THE AMAZON REGION

An introduction

Amazon is Brazil's largest and most uncommercial state. It covers over 1.3 million square kilometres and has a population of two million. Over half of the population live in the capital city of Manaus, which covers 14 000 square kilometres. The Amazon region has been fought over since its discovery by the Portuguese. It is rich in natural resources, containing 95% of Brazil's rubber harvest, 48% of its manganese, and has the largest deposits of iron ore, uranium, oil etc. It is perhaps more famous for its rubber trees, called Brazil nut and mahogany (harvested for their wood) the myth of El Dorado — the Gold King — and the legend of George in 1540. The search for gold has dominated Amazonian history.

Gold Fever

The process of gold mining releases vast quantities of mercury into the rivers, poisoning the lives of the animals and human inhabitants alike. Mercury causes CNS poisoning in the

form of Minors (1970), an epilepsy and eventually, madness. It has also caused fevers, including malaria and other tropical diseases, and renal damage.

Mercury can be absorbed, absorbed through the skin or ingested or food. It is at its most toxic when methylated. The process of methylation occurs most readily in its acid-ester form and is enhanced by the presence of iron and molybdenum, both found in the hard waste of the Amazon river and its tributaries. Methylmercury is also carried out by the gas mercury dimethyl sulphide, which forms the sulphides of the Indians living along the river banks. In a recent survey, 15% of the Indians used between levels of mercury in their hair, blood and teeth. Mercury contamination, previously found only in the weathered sediments around the major gold mining areas, is now spreading as in the major tributary of the Amazon, the Rio Negro. It is feared that there will be major long-term effects on the region's population and mercury is now considered the greatest threat to the Amazon region today.

Deforestation

The original inhabitants of the Amazon basin, the Indian tribes, were estimated to number between 4 and 12 million in 1492. Today there are less than 200 000. Their land, their rights and their livelihoods have been systematically eroded by a succession of developers who hoped to make their fortune 'burn' out down this, but have not acted and concentrated those which have flooded the forest destroying Indians and villages. The Amazon ecosystem is now fragile and when trees are destroyed the soil quickly becomes barren. Crop farming is only possible via prolonged mercury use is allowed between harvests. The development failed to materialise, and it was Indian and impoverished they returned to the city, leaving the destruction behind. Indians, since the rubber boom city became overcrowded and poor. Diseases spread rapidly with many people died of repeated cholera, palis and yellow fever.

The great Lacerda Ferry is regularly overloaded as Rio Negro Hospital, Plymouth is a transit to quarantine.

The Present

In recent years, to maintain government health programmes of vaccination and education has been much to eliminate these preventable diseases. The three diseases which now attract greatest concern and interest to the Malayan people of peninsular and federal land workers are malaria, brucellosis and leprosy.

MALARIA

The transmission of malaria is optimal at a temperature of between 23°–30°C and mean relative humidity of more than 80%. Thus the more tropical climates of the Amazon region provides ideal breeding ground for the malaria parasite. The two types of malaria parasite found on the Amazon are *Plasmodium Vivax* and the more fatal *Plasmodium Falciparum*. *Plasmodium malariae* has developed widespread chloroquine resistance and used recently on biogaine formed the majority of treatment. During my time at the Hospital for Tropical Diseases I saw one young male with malarial fever from a chloroquine resistant *Plasmodium malariae*. This was the first case of the biogaine resistant malaria seen in the hospital and despite being an isolated case was causing much concern.

Artemisinin, a 2000 year old Chinese remedy first described in AD1496 in Ge Hong's *Wandou* for febrile agues, treatment as a remedy for paroxysmal fever, is the new wonder drug of malaria therapy. The leaves of the sweet woodweed *Artemisia annua* have been chemically analysed and Artemisinin, a non chemically produced molecule, it has proved to be highly effective at treating resistant *Plasmodium malariae* and as we both oral and intravenous, it was administered in hospital. Unfortunately as highlighted by a 2000 *schistosomiasis* remedy, Artemisinin, is now being sold by chemists on the streets in Korea. It is feared that uncontrolled use will subvert drug resistance resulting in malaria.

LEISHMANIASIS

Leishmaniasis Brasiliensis spread by the bite of the female sandfly, is extremely widespread in the Amazon basin. The disease during summer are found in the periphery of the city, and the forest where mosquitoes sharing of the forest has provided an ideal breeding ground, and children who play in the forest are common victims of the disease. The rubber tappers and

house workers are the most most groups of victims.

Leishmaniasis causes numerous lesions which if untreated will heal but the disease will then later invade the macrophages system, especially the spleen, to up to 50% of infections causing destruction of the nasal and pharyngeal tissue. *Macrophages leishmaniasis* can occur between 10 and 30 years after the initial infection and as well as being extremely disfiguring is very difficult to treat.

The skin lesion presents as an ulcerative papule of varying size which has a raised red rim edge. The lesion does not heal but there is a constantly a satellite lymph node which may be extremely large. A slide is made from lymph scrapings taken from the ulcer margins which are fixed and stained with a Giemsa stain. Slides can be viewed within an hour and the presence of *Leishman* nodules helps provide the diagnosis. Treatment can be started the day.

Treatment consists of a course of 20 injections of Glucantone, a potent but toxic antimony compound, sandfly has cheaper than Glucantone. *Leishmaniasis* is a dose of 10–20 mg/kg/day. First injection Glucantone is a dose of 4 mg/kg/day for three days provides a most useful alternative. It has been found to be more effective and with only three doses patients complained of lighter but too many more side effects. *Parasiticide* is effective and usually a 4–6 mg/kg dose treatment. The lesion is re-exposed after 30 days and treatment repeated if still healing has not taken place.

Mucocutaneous leishmaniasis presents as nodules with ulcerative crusts, ulceration and disfigurement. Destruction of cartilage occurs over a 10 year period. Secondary infection is very common and very painful. The diagnosis is made from biopsy and the Montenegro test which measures delayed hypersensitivity to antimonial protozoans. I saw a 70 year old house worker with a history of cutaneous leishmaniasis 20 years previously where nasal cartilage had been completely eroded by mucocutaneous disease over a long period (Figure 18, fully presented to the hospital with a secondary infection).

Treatment of mucocutaneous disease is with a long course of high-dose *Parasiticide* but even this is only partially successful in the majority of cases.

Treated leishmaniasis (Shirai 1983) is notoriously rare but was not considered to be a major problem in the Amazon region.

EXPERIMENT

The world's oldest disease is still very much alive in Brazil today. An average day at the Alfrêdo de Mello Institute produces five new cases and there are many thousands of chronic sufferers at the moment. The government has set up a leprosy education and treatment programme and the art of stabilizing therapy is slowly bringing the disease under control. One test I visited was a medical unit of an old leprosy colony. One of 14,000 inhabitants, 3000 have leprosy — an average, one pair family. They were called *lepra* leprosy in New Hebrides but here others previously declared to be cured and cured of leprosy patients, and one treatment hospital bringing *Verguetos* with *lepra* leprosy patients. Visiting the hospital was like stepping back in time. The majority of the patients were blind or deaf or both eyes, many had all their digits and few had all their limbs. However, all the patients were well, and the and part of the community, which for the majority of the, had they is of those that are in

from. Hopefully, with the government programme, leprosy will no longer be a threat.

The treatment of leprosy is still paid for by the government. Multidrug therapy leprosy patients with a low cell count and immunity is treated for two years with clofazimine 100 mg daily, rifampicin 600 mg monthly and clofazimine 100 mg alternate days or 100 mg monthly plus 30 mg daily. Periodic therapy tuberculosis leprosy patients with a high cell count and immunity is treated for six months with isoniazid 150 mg daily and rifampicin 600 mg monthly.

Many patients experience a maculopapular rash syndrome. Type I reactions may not lead to a rapid change in well established immunity occurring during the first six months of therapy. The rash is usually small and may be itchy and there may be ulcers of the feet, skin, hands and wrists. Type II reactions which is an immune complex syndrome which may resemble erythema nodosum and can be treated with pred-



Mr. Carlos da Silva, 40 years old, who has had leprosy for many years. (Photo by the author.)

and wedding, circumcision and the appearance of scabies and plaques. The common view, especially those problems with conjunctivitis, is, however, not uncommonly that their disease is purely viral. Treatment for the common view is sub-optimal, is much more effective and especially licensed for the childhood. The disease is an extremely effective immunosuppressive drug also has highly infectious properties. All female patients are given a gynaecological examination and receive free contraception and the drug is only used on a named patient basis. All patients receive education about their disease and the issues of sex and blood use. Physiotherapy, acupuncture, and health workers are all involved in the continuing care.

OTHER DISEASES

Fungal infections are very common in an immunological infection which often comes pronounced in otherwise healthy young people.

All 1611 on the current, particularly foreign women, and a of particular concern to medical workers, many of whom require blood transfusions, so far all blood is screened.

Lymphatic filariasis is uncommon but *Onchocerca* (transmitted by blackfly) is

present in the North of the region and is a cause of blindness in children.

Trypanosomiasis (Chagas Disease) is found mainly further south in a few communities.

IN CONCLUSION

The problems of the Amazon region are largely the problems of Brazil. In a country with a population of 1.05 million where there is city-rising influence and where, by European standards, 60 million people live in squatter without proper sanitation or clean water, there are bound to be difficulties. Some million children do not attend school and there is epidemic ill-health (11 million). Despite widespread recognition the government is trying to introduce a more available health care system and slowly progress is being made. It would be interesting to return in 20 years time to see what impact has been made on the health of the region.

I thoroughly enjoyed my time in Manaus, and learned much about health care problems in a developing world and the importance of local, national and education. The field may have its problems, at present but our accepted 'standards' of health care and education should not be applied too lightly.

Case report: *Brucella* Osteomyelitis — A difficult diagnosis

G. E. D. Howell

Introduction

Brucella is a rare infection which is, said to appear. It should be noted that it is commonly a person with suppressed immunity and it does not have commonest infection and early presentation and it often is related to sex exposure. Very rarely the disease is associated to osteomyelitis. The case described here is thought to be the first reported in the English literature. (Received 10 July 1983)

Sergeant Lawrence Cornelius Howell is a telephone engineer at Royal Naval Hospital, Gosport.

CASE REPORT

A 33 year old married duty farmer attended his general practitioner complaining of a three weeks of pain in his right ankle. He gave no other relevant history and had no other symptoms. On examination there were no abnormal signs and radiograph examination was unremarkable. He was examined and discharged.

Five months later he returned to his general practitioner with increasing pain in his right ankle and was referred to the Department of Rheumatology. His definitive diagnosis was

made but the right ovula point was injected with 40 mg of Depo-Medrone. An ovarian cyst was found on the right side but not associated and tender with a fluctuant mass medially. The pus was aspirated and sent for culture. No response was given. Cephradine 500 mg tid and flucanazole 500 mg tid were administered consistently and an orthopedic opinion sought.

The following day, to relieve drainage of the abscess, an incision was made over the point of previous external fluctuation. The incision cavity reached to the tubular point which was closed and surrounded by pale granuloma tissue. Pus and tissue were sent for microscopy and culture and a provisional diagnosis of tuberculous made. A drain was left in situ and a saline towel cloth applied. No response was noticed and Todd-Michael staining of the samples showed no evidence of tubercle. Chest radiograph was entirely normal. A Mantoux test was negative. Serially antibiotics 1 to 40 were noted.

At seven to ten weeks later, the second had healed. Subsequent to this, a further fluctuant



Figure 1. Right ovula point (left) and right ovula point (right).



Figure 2. Drainage of abscess from right ovula point (left) and right ovula point (right).

appeared medially and compressed tomography (Figure 1) revealed extensive soft tissue shadow with possible involvement of the tube. A further drainage procedure was performed and the wound left open. The antibiotics were changed to rifampicin 600 mg twice daily and rifampicin 150 mg twice daily under advice of the microbiologist. Radiographic examination two months later showed improved density of the body of the tube. Repeat computed tomography revealed extensive osteomyelitis of the tube with sequestra medially and posteriorly. A second operation showed a change of antibiotic to cloxacillin 1.5 g six times a day and six weeks later was fit for bearing cast. The patient was commenced on a course of isoprenaline, oxygen therapy (Dividing Diseases Research Centre, Plymouth).

The patient dramatically improved but seven two months later received a further shock and this was immediately deemed sepsis. The tube was drilled, removed and penicillin G benzathine injected into the tube (Figure 2). Culture of the tube and surrounding soft tissue subsequently gave a small gram negative bacillus which was thought to be *Brucella* or *pasteurella*. The antibiotics were changed to cephalexin 750 mg twice daily.

There was visit to the Royal Naval Profile Index in Portsmouth who suggested the culture to be *Brucella*. The *Brucella* Reference Library in Portsmouth confirmed the *Brucella abortus* type 1 was diagnosed in association with World Health Organization instructions, the patient's antibiotics were changed to tetracycline 600 mg twice daily and rifampin 600 mg once daily.

At this point the patient volunteered that 2½ years back he had been infected with brucella infection prior to admission of the disease and that he had consumed unpasteurized milk. He had suffered severe night sweats for many years but otherwise had remained symptomatically well.

The penicillinic trials were changed one month later. The antibiotics and hyperbaric oxygen were continued. The Public Health Laboratory in Portsmouth advised the bacterium be changed to penicillin 180 mg daily and cloxacillin 180 mg daily and signs and symptoms settled.

When seen two months later, the patient was doubled with pain in the joint. Radiographic examination demonstrated marked narrowing of the tibial joint and a bone scan showed the tube to be eroded. The patient subsequently underwent a change of the tibial joint and remained in a below-knee cast weight bearing

one week weeks post operation. He was discharged at final review some 27 months after initial presentation.

DISCUSSION

Infection by brucella species was first described in 1894 by Motzkin in long tines from a Mule. The disease became known as White Fever and the organism was first isolated 77 years later by Sir David Bruce from the spleens of soldiers who had died from White Fever. The organism and infection now bear his name. Brucella has subsequently been isolated from most forms of domesticated livestock.

The organism is a small aerobic Gram-negative gram-negative coccipollicular which is non-flagellated, non-spore forming, slow growing and facultative. There are six species of *Brucella abortus* infections with cattle, dogs and swine. The first four have a pathogenicity to man. *Brucella melitensis* is the commonest and most virulent pathogen to man. Transmission is by infection, inoculation or ingestion. There are approximately 30 cases reported annually in the United Kingdom, most occurring abroad usually in South America and Eastern Europe. Infection by brucella in this context is laboratory staff working with the organism.

PATHOGENESIS

Brucella is an intracellular organism which is an acute fast defluence including phagocytes in which it may survive. It may remain viable within the cells of the reticulo endothelial system, particularly the spleen for long periods.

CLINICAL FEATURES

Brucellosis is a multi-system disease with no specific signs or symptoms and epidemiological evidence is considered the key to diagnosis.¹ Symptoms include malaise, weakness, headache, anorexia, chills and fever especially in the evenings, weight loss, arthralgia and back pain — 30% of patients have lymphadenopathy and 30% splenomegaly. Medical complications are reported in 20-50% of cases and include osteitis, spondylitis, osteomyelitis, hepatitis and myocarditis. Osteomyelitis is rare. The organism is difficult to culture from biopsy or culture requires specific and narrow conditions in which to grow.²

Early diagnosis requires a high index of suspicion and usually takes serological, dual and blood history. The above symptoms when present in a patient with a relevant history of

travel to endemic area, exposure to unpasteurized milk, or occupation relating to farmwork. Necessary exposure to disease vectors, etc. should alert the clinician. History of the causative organism prompts serological evidence of brucellosis. The diagnosis, however, is usually made by demonstrating a significant or rising WBC with a slowly rising "Leu count" as seen in some cases should be further checked as chronicity of infection using complement fixation or enzyme-linked immunosorbent assay (ELISA). IgM antibody can be detected one week after infection and persists for years. IgG antibody appears a few days later and lasts equally following infection.

Relapses following treatment occur in 2% of patients, and are thought to be due primarily to incomplete treatment. The World Health Organization guidelines² recommend doxycycline 200 mg per day with rifampicin 600-900 mg per day for six weeks. If a cure is not achieved, this should be extended to doxycycline 200 mg per day for six weeks, and streptomycin 1 g per day for three weeks. Gentamicin is a useful alternative to streptomycin.

SUMMARY

The patient in this case report was probably

infected by ingesting unpasteurized milk from a cow immunologically bred. The causal organism which probably occurred some 50 years prior to presentation was evident only by night sweats. A high index of suspicion must be maintained in patients complaining on non-specific symptoms who are or have been in a high-risk area, or have travelled in endemic areas of the world.

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The diagnosis, progression, prognostic indication and classification of periodontal disease: A Review (Part 3)

C. R. Prentice

Introduction

In the third part of this review, the different types of periodontal disease defined in Periodontitis will be described. The disease are grouped according to the classification accepted by the World Workshop on Periodontitis (1996). A particular emphasis is made of the importance of the periodontal tissue in underlying systemic disease and the mechanisms by

which they are mediated. In view of the close relationship between oral and systemic health, it is important that all general dental practitioners have a sound knowledge of oral diseases and oral pathology in order that systemic conditions and symptoms in regard to disease may be referred to the appropriate dental or medical department/hospital. Furthermore, it is highly probable that a good medical practitioner, being properly equipped in oral examination and analysis, is becoming deliberate that the medical and dental

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ADULT ONSET PERIODONTITIS

Disease progression has progressed to involve the periodontal ligament and the bone—the tissue

is defined as periodontitis. The inflammatory cell infiltrate forms a band which extends into the connective tissue at a depth from the buccal plaque for a distance of between 1.5 and 2.5 millimetres. This is surrounded by a zone of inflammation-free fibrous tissue which effectively walls off the lesion and is a hallmark of chronic inflammation. The underlying bone is involved to some extent in the advancing lesion.

Adult onset Periodontitis is one of the forms of periodontal disease which occurs with increasing prevalence from about thirty five years of age. The distribution of periodontal diseases in an individual largely follows the distribution of the coronal buccal plaque and is not associated with immune deficiency.¹¹ Localized plaque extending factors including bacteria causing oral surface, gingival, periodontitis or root decay, if untreated therapy, oral contraceptives, smoking and splinting with amalgam and the presence of tobacco provide the altered environment or ecological niche for the unbalanced movement of dental plaque with the consequent alterations in the proportions of aerobic and anaerobic, micro-organisms and the increasing proportions of anaerobes. *Streptococcus spp.*, *Prophyromonas* and *Ferriplasma spp.*, *Parodontomonas spp.*, *Campylobacter spp.* and other organisms associated with chronic inflammatory periodontal disease.¹

It has been reported that stress increases susceptibility to infection.^{12,13} Indeed it is not uncommon to find there has been some psychological stress involved in patients who exhibit various severe periodontal diseases although the mechanisms have not yet been fully explained. Some degree of immunosuppression possibly through T Lymphocyte helper and suppressor cell imbalance may be involved with a consequent reduction in the quantity of immunoglobulin produced following activation of the humoral response. A further mechanism which may operate to support immunity may involve raised cortisol levels although immunosuppression may be detected in adrenocortical insufficiency. Psychological stress, in association with immunosuppression has been shown to be capable of suppression of immunity but it is difficult to isolate the effect of psychological stress from other variables.¹⁴ However it must be borne in mind that in all cases of adult onset periodontitis the periodontal destruction is a result of bacterial plaque control in a susceptible host. The level of plaque

control which is adequate for any patient may be inappropriate for another or indeed may be inappropriate for the same patient at a different point in time.

EARLY ONSET PERIODONTITIS

This group of periodontally destructive conditions involves young patients young of whom may be less than five years of age.^{15,16} Consequently some of the conditions may affect the primary dentition. There is frequently an associated general predisposition as in immunological defect which is representative of the pathogenesis. The main systemic forms of early onset periodontitis include *Neutropenic Juvenile and Leukocyte Adhesiveness Periodontitis*.

Periodontal periodontitis (PP) is a more chronic condition with complex hereditary pathogenesis involving immunological defects including Chediak-Higashi Syndrome, atrophic keratosis, Ellis-Danlos Syndrome, haemophagocytosis, lymphoproliferative, Hurler-Scheffer Syndrome.¹⁷ Periodontal Periodontitis occurs in both localized and generalized forms. The generalized form affects both the primary and the secondary dentitions and is characterized by severe gingival inflammation, rapid destruction of the periodontal supporting tissue and consequent increased mobility, suppuration and tooth loss. Characteristic white plaques on the buccal mucosa in both the *Polysymphonocytosis Leukocytes* and *Lymphocytes* are present. These immunological defects result in other severe infections including sinusitis, otitis media and upper respiratory tract infection.¹⁸ The localized form of the disease is less aggressive and is related to a defect involving *Polysymphonocytosis Leukocytes* or *Lymphocytes*, but not both. The most prominent characteristics present in the form of both patients include *Feverish* eruptions and *Capsitis gingivae gingivae*.

Juvenile periodontitis generally occurs around the time of puberty, however cases have been reported as early as 5 years of age.¹⁹ Most commonly the destructive lesions affect the first permanent molars, and the eruption often being symmetrical in distribution. However a more generalized distribution of the disease has been reported but it may be that cases occur very early prior to or without eruption and the number of affected sites increasing with advancing age. However the progression from Localized Juvenile Periodontitis to Generalized Juvenile Periodontitis is far from inevitable. For this

appears to felt that the generalized form should be referred to as Generalized Severe Periodontitis.²² This condition may be synonymous with Rapidly Progressive Periodontitis.²³

In Localized Juvenile Periodontitis the rate and severity of destruction appear compatible with the quantity of bacterial plaque or with the severity of clinical inflammation as is often the case. The rate of loss of attachment is frequently sufficient to lead to loss of 30-75% of the attachment in 4-5 years.²⁴ Clinical response has shown that many of these patients exhibit features of the destructive potential of the condition on their malocclusion. Aiding conditions. Juvenile periodontitis affects more females than males in a ratio of approximately 3:1 while in Blacks the ratio approaches 1:1. The overall prevalence in a European population is reported to be 0.1% while the prevalence in other population groups, including Indian, Middle Eastern and Jewish groups, may be as high as 2%.

Immunological dysfunction including depression of Neutrophil chemotaxis and Lymphocyte responsiveness have been detected in patients affected by Juvenile periodontitis.²⁵ Furthermore there has been some limited evidence for the survival of specific immunological defects in some patients suffering from the generalized form of Juvenile periodontitis where therapy has been successful.²⁶

The aetiology of these lesions usually includes *Actinobacillus actinomycetemcomitans*, *Prevotella intermedia*, *Campylobacter*, *Actinomyces* and *Bacteroides* species. However the single organism considered to be intimately associated with Juvenile periodontitis is *Actinobacillus actinomycetemcomitans*.²⁷ While this organism is considered important in the localized form of the disease, *Porphyromonas gingivalis* appears to be important in the more generalized form. The destruction becomes more severe and the pockets become increasingly deep with time. It has been found that sulcus from pockets 3-5 mm deep contain high numbers of *Actinobacillus actinomycetemcomitans* while sulcus from pockets in excess of 5 mm deep contain high numbers of *Porphyromonas* and *Prevotella* species. The detectable levels of *Actinobacillus actinomycetemcomitans* are significantly reduced or diminished following successful therapy while more characteristic combined periodontal diseases have been found in harbour large bacterial numbers of the

organism following therapy.

Rapidly Progressive Periodontitis (RPP) is an aggressively destructive periodontal disease affecting young and appears to largely appear between the age of puberty and 35 years.²⁸ The loss of periodontal attachment and bone is rapid and accompanied by severe inflammation. A large proportion of patients suffering from this condition have a defect in chromosome 21 and a depressed lymphocyte and lymphocyte response (AMLR).²⁹⁻³¹ Types A and B³² of the disease have been described with the major difference being a slight variation in the age groups affected type B being prevalent from 20-35 years of age. Furthermore type B being associated with greater plaque amounts and calculus.³³

PERIODONTITIS ASSOCIATED WITH SYSTEMIC DISEASE

Destructive periodontal disease may provide real evidence of underlying systemic disease including immunological abnormalities, immunological defects, reduced host by Haemophylosis, X Hypophosphataemia, periodontitis induced conditions including Papilloma-Like Lesions, Acute systemic disease which induces immunological responses or leading delay may result in exaggerated periodontal destruction in response to microbiological agents.

Patients suffering haemophilia may present with enlarged haemorrhagic gingivae accompanied by periodontitis. In some cases bone destruction of the alveolus may be observed. Neutropenia (including granulocytopenia cyclic neutropenia chronic benign neutropenia, chronic idiopathic neutropenia and familial benign neutropenia) may also be associated with periodontal disease.³⁴

Patients infected with the Human Immunodeficiency Virus (HIV) frequently exhibit oral signs of disease. Recent reports indicate that a high proportion of patients diagnosed as HIV seropositive have oral signs and symptoms³⁵⁻³⁷ including and candidosis, Kaposi's Sarcoma, and mucosal ulcers and hairy leukoplakia and suggested periodontal disease. There is limited evidence which may suggest the mycoplasma associated with HIV-Diagnosis (HIV-D) differs from that found in HIV sero-negative individuals, indeed it is similar to that found both in HIV Periodontitis (HIV-P) and which most periodontitis in seropositively healthy patients.³⁸⁻⁴² Such

similarity between the serotypes of HIV G and HIV F may suggest that HIV G is a precursor to the perinatal disease observed in HIV F. For this reason it has been proposed that early detection and appropriate therapy for HIV G may prevent the virus and rapid perinatal disease associated with HIV F.¹⁰ The onset of perinatal disease appears to be related to the severity of the HIV systemic disease and to defects in T lymphocyte regulation and decreasing numbers of CD4 lymphocytes in the peripheral blood. There does not appear to be any relationship between the severity of perinatal disease and the quantity of cytopathic dental plaques.¹⁰ Some reports have indicated that the perinatal health of HIV seropositive patients is significantly worse than HIV seronegative individuals.¹¹ These reports have been criticised for overestimating the prevalence of perinatal disease in HIV seropositive patients, by including only subjects who were both HIV seropositive and presented with and symptomatic A, further follow-up was requested where no overt infection was observed.¹² These findings indicated that the perinatal health of AIDS patients was similar to that of HIV seropositive patients without AIDS. Furthermore, the perinatal health of HIV seropositive patients was statistically similar to that reported in the general population.¹²

It is likely that both HIV G and HIV F are rare conditions although their incidence can only be assessed from this study due to the small number of subjects included.¹³ The problem of establishing incidence and prevalence is further complicated when it is considered that HIV seropositive patients may suffer perinatal disease like any other individual, which is in no way associated with their HIV serological status.¹⁴ Indeed it is from this study that a number of HIV seropositive patients had perinatal disease prior to HIV sera collection for three reasons, the prevalence of perinatal disease directly related to HIV infection is extremely difficult to estimate.

In order to make a diagnosis of HIV G or HIV F, the serological data must be known. Therefore a model needs to exist as a statistically acceptable distribution of perinatal disease with respect to HIV status. A virus disease which exists in a latent HIV seropositive patient is likely to be diagnosed as HIV G or HIV F. Without a plasma history to the HIV seropositive will be diagnosed differently.

An initial study which Scheme was proposed by South Polya and Werry¹⁵ dividing oral

perinatal lesions into three categories: A, B and C. Category A lesions (just specific gingivitis and slight more perinatal) were in an way considered to be indicative of HIV infection. Category B lesions (acute necrotising ulcerative gingivitis and rapidly progressive periodontitis) they occasionally be associated with HIV seropositive status, while category C lesions (linear gingival erythema and necrotising periodontitis) were considered pathogenesis of HIV infection. However linear gingival erythema may be associated with occlusal interference and lesions of a severe specific character is found in advancing periodontitis may occur without infection in HIV seropositive individuals. Such descriptive lesions are diagnosed in different ways, in different places leading to misleading results in terms of the prevalence of HIV associated perinatal disease in surveys. Currently the problem remains unresolved. These descriptive lesions may have occurred even if the patient had not contracted the HIV infection. It is for these reasons that the classification of South Polya and Werry¹⁵ is misleading and it is not generally accepted as Category C lesions are not pathogenesis of HIV seropositive status.

Diabetic mellitus may be associated with oral symptoms including lymphoid hyperplasia to infection which may include descriptive perinatal disease. Diabetic in particular may present with a number of oral signs and symptoms including leucoplakia, burning tongue, bad or purulent taste sensation and candidiasis and inflammatory periodontal disease. It has been shown that of patients suffering Diabetic mellitus, the incidence of descriptive perinatal disease is between a three and five times greater than in apparently healthy subjects.¹⁶ This increased incidence could not be accounted for on the grounds of age, sex or hygienic. It has also been shown that plaque and gingival scores are less than any greater in diabetics than in non diabetic control subjects.¹⁷ The predisposition for quantitative perinatal disease is well established in diabetics does not appear to be as great as in poorly controlled diabetics but it is found that in healthy individuals. Poorly controlled diabetes in particular, from these elements have present low of diabetes and higher plaque and gingival index, than well controlled diabetics, and apparently healthy subjects.^{18,19} The mechanisms involved in the increased susceptibility to perinatal and other infectious conditions are thought to arise from impairment

of polymorphonuclear leucocyte chemotaxis and phagocytosis, enhanced lipopolysaccharide production^{10,11} and high superoxide coupled with reduced cyclic Adenosine Phosphosphate in periodontal tissues leading to expenditure with tissue metabolism and healing.^{12,13}

Histiocytosis X is a disturbance of the reticulo-endothelial system of uncertain aetiology.¹⁴ It has been suggested that the disease results from the proliferation and disorganization of post-lymphoid Langerhans cells,^{15,16} and includes Langerhans disease, Histiocytis Xanthus, Churgman disease and eosinophilic granuloma. Histiocytosis reported a prevalence of 114 out of 1 100 young patients with periodontal disease. This figure, however, demonstrated that these patients are oligodentulous in early onset periodontitis or periodontitis periodontitis. However, following parodontal therapy and a bonding biopsy, no histological picture of eosinophilia, granuloma is found.^{17,18} In early onset periodontitis, one mechanism which may predispose to infection, including periodontal disease, is the presence of a defect in eosinophil chemotaxis.¹⁹

Hypophosphatasia is a disorder induced by a deficiency of alkaline phosphatase with consequent retention of phosphoethanolamine in the urine.^{20,21} Three types of the disease have been identified: infantile, childhood and adult. The infantile form occurs before 6 months of age, is neonatal refractory and is frequently fatal. If infants survive, the clinical findings include failure of growth, rickets, skeletal deformities, recurrent pneumonia and head disease.²² The childhood form is a milder disease dominant in denture and less severe. A common feature of which is progressive enlargement of the deciduous dentition. The adult form is asymptomatic disease and is the least severe form of the disease. Clinical findings include progressive enlargement of the deciduous teeth and rickets (diagnosis in childhood).^{23,24} The teeth of patients with hypophosphatasia may exhibit large pulp chambers and have been described as 'shell teeth'. Periodontitis may affect both the deciduous and permanent teeth with the deciduous teeth and the permanent incisors being most commonly affected. There is usually minimal inflammation. There may be an increased defect radiolucency response of the polymorphonuclear leucocytes and neutrophils.²⁵

Papillon-Lévy Syndrome (PLS) is an autosomal recessive syndrome of uncertain aetiology. It has been proposed that the condition is related to generalized epithelial dysplasia.²⁶

The most prominent clinical signs of Papillon-Lévy Syndrome include hypermobility of the palm of the hand and the index of the first accompanied by destruction of the periodontal tissue. With rare exception, the majority of deciduous and permanent teeth are involved.²⁷ The youngest patient reported so far involved two siblings aged 12 months. The proposal that the mechanism of the disease may include a defect in the chemotaxis of polymorphonuclear leucocytes is corroborated. Van Debe²⁸ and Trimmoff²⁹ reported chemotaxis dysfunction in patients with PLS while normal chemotaxis was found by Lyberg,³⁰ Schneider³¹ and Harman.³² Other possible mechanisms include reduced polymorphonuclear leucocyte adhesion,³³ defects in microfilament locomotor mechanisms,³⁴ depressed lymphocyte chemotaxis³⁵ and delayed Fc receptor mediated phagocytosis by monocytes.³⁶

Short Root Syndrome (SRS) may result from a congenital defect resulting in shortness of the parodontal tract and root fibres such as isochromic osteoclasts containing matrix vesicles.^{37,38} The clinical features generally supports malocclusion as a period factor aggravating but not causing periodontal disease.³⁹ Patients with SRS may now be managed around removal of malocclusion by the use of braces, orthodontics. In other cases the absence of fibrous bands in direct analogy of the periodontal structures due to the lack of orthodontic means may lead changes, include a reduction in the colligatory and narrowing of the periodontal ligament, consequent of the fibrosis and consequent enlargement of roots.⁴⁰ A recent report on twelve school children, aged 2 and 7½ years demonstrated radiographic evidence of loss of alveolar bone in the primary dentition accompanied by tooth mobility, gingival recession and premature tooth loss.⁴¹

ACUTE NEROTISING ULCERATIVE PERIODONTITIS

Acute Necrotising Ulcerative Gingivitis (ANUG) is defined as an acute necrotising gingival infection of complex aetiology characterised by necrosis of the tips of the gingival papillae, spontaneous bleeding and pain.⁴² Although the terminology indicates that ANUG is a gingivally limited lesion, it has been suggested that it is associated with loss of periodontal attachment.⁴³ Clinical observations on Nigeria indicated that ANUG is the starting clinical

cardiac attack results in the stress (acute depression) of the dental services based in patients suffering from cardiac risk.¹⁰ Furthermore, an investigation of probing attachment levels in ANUG affected and healthy cases revealed significantly greater loss of attachment in ANUG affected sites.¹¹ These findings would suggest that ANUG may be erroneously classified as a gingivitis and should be included in Acute Necrotizing Ulcerative Periodontitis (ANUP).

REFRACTORY PERIODONTITIS

The term Refractory Periodontitis describes cases of severe and rapidly advancing periodontitis which fails to respond to periodontal therapy in the presence of good oral hygiene and appropriate professional treatment.¹² It is likely that this classification has been used inappropriately to describe periodontal lesions in highly susceptible patients which have not responded to the treatment provided where the treatment was either inadequate or inappropriate or the patient's oral hygiene was not adequate. Investigation of subgingival flora is technically difficult and often incomplete which predisposes to inadequate or incomplete root surface debridement and hence continued periodontal destruction. Refractory periodontitis, may therefore be distinguished from recurrent disease through specific failure. Patients with recurrent disease exhibit periods of remission following therapy and before recurrence. In cases of refractory periodontitis no such periods of remission are found. Instead there is continued destructive disease activity with increasing pocket depths, isolated elevated levels and tooth loss. Such sustained deterioration occurs either as a result of a defect in host defence or due to infection by a particularly virulent organism. Due to the current incomplete knowledge of refractory periodontitis it is difficult to derive a rational mode of therapy.¹³ In a disease with such diverse aetiological aetiology it is recommended that a logical approach should exclude subgingival bacterial sampling followed by more clinical and systemic venously testing. The use of appropriate microbiological agents to supplement mechanical debridement may improve treatment efficacy.

SUMMARY

Periodontal disease may be largely divided into gingivitis and periodontitis depending on the extent of tissue involved. It is not inevitable that all cases of patients exhibiting gingivitis will

progress to periodontitis although it is rare for the latter to arise de novo. Although periodontal disease frequently occurs in the systemically healthy individual, systemic disease often modifies the response of these tissues and may offer an early chance to diagnose any underlying general health problems. A detailed but simple periodontal examination and its provision as a valuable health screening measure as part of general health care.

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THE QUALITY INVESTMENT ASSOCIATION
SPECIAL EXPERTISE

Audit

Is perianal sepsis adequately managed? The results of a five year audit at Royal Naval Hospital Haslar

S. J. Parker and R. F. Dale

Abstract

A retrospective audit and postal questionnaire of 168 patients presenting with perianal sepsis revealed that the majority of patients required extensive surgical drainage of a perianal abscess. It did not confirm that the use of antibiotics alone allows the long-term control of these patients. It suggests that early, systematic clinical assessment and laying open of a abscess may not be necessary in all patients in which gut-related organisms are identified. There was no consistent difference in treatment rates of perianal sepsis, between those presented as a primary or recurrent sepsis, though there was a lower rate of relapse in the first patients.

INTRODUCTION

Surgery for the acute anorectal abscess is often performed by the most junior of surgeons. The standards of initial drainage following such surgery has been variously estimated at between 17 and 90% (1). The rate of recurrent sepsis, at the site of previous surgery is high. Upperton (2) in an audit followed by an objective examination under anaesthesia (PILA) by an experienced surgeon, dependent on faecal sigmoid resection, has been proposed as the optimum way of managing these patients (3). However, and despite, of the absence of initial proctoscopy followed by the subsequent use of anorectal sepsis has been regarded as an alternative way of assessing (4).

No systematic comparison of either the hospital or the outpatient management of perianal sepsis. An audit of the surgery and outcome of all patients treated by simple incision and

drainage with or without a subsequent EUA, yielded a simple way of assessing our long-term results.

PATIENTS AND METHODS

Between 1 March 1988 and 28 February 1993, 162 patients underwent surgery for perianal sepsis. The records of 148 patients were retrospectively analysed. Eleven patients had complicated anorectal sepsis and were excluded from the analysis (Crohn's Disease 5, Anal carcinoma 2, Ulcerative Colitis 4). Three patients, with challenging abscesses, an abscess, managed entirely conservatively, were similarly excluded (Figure 1).

Postal questionnaires were sent to all patients to identify those who had had recurrent symptoms following recovery from their surgery. Patients were asked whether they had had pain, a puslike discharge or swelling at the site of their surgery. Patients were not invited to seek them, for recurrence as a large proportion (22%) were service personnel, many working outside the local area. Statistical analysis was performed using Fisher's exact test.

One hundred and seventy-two men and 24 women were studied. The male female sex ratio was 5.5. The mean age was 39 years (range 2 to 79 years). These patients had defined the four

RESULTS

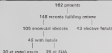
Anorectal Abscesses

One hundred and five patients underwent surgery for acute anorectal abscesses. Twenty-eight (26%) of these patients had had previous anorectal sepsis. Fifteen patients (14%) had recurrent abscesses, from a perianal abscess prior to admission.

All 105 patients underwent abscess and

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Figure 1 Breakdown of patients



diagnosis of the acute abdomen were after admission. The anatomy of the specimens was described in 50 neonatal and 25 embryonic. As seen from Table 1, most of the initial operations were carried out by nonspecialized junior staff. Twenty-one patients (45%) were operated on outside of normal working hours (09:00 to 17:00). Only two (2%) operations were performed out of hours by senior registrars or consultants. Forty patients (8%) were in the subgroup of EFM. A laparotomy was done and the results of which 74% of operations were performed by senior registrars or consultants.

Table 1 Number of patients operated on by anatomy of the operation with acute parental diagnosis and elective parental findings

	Acute Abdomen (n = 148)	Elective Fetuses (n = 43)
Coarct	15 (10%)	25 (58%)
Reg/SHO	85 (58%)	15 (35%)

A fistula was identified in 33 (45%) patients with acute abdomen. Twenty of these fistulae were identified in the initial operation. The anatomy 15 fistulae were diagnosed in the subgroup of EFM. The anatomy of the fistula identified were grouped according to the classification proposed by Parks et al.¹⁷ The results are shown in Table 2. Forty-three (46%) patients underwent histology of the specimen. The remaining two patients had no specimen examined.

BACTERIOLOGY

Bacteriological results were available on 96 (40%) patients with acute neonatal abdomen. In five (1%) patients no bacteriological growth

was obtained. Three of these patients had received antibiotic therapy prior to admission to ward (7%). Positive bacteriological specimens were not sent or were lost. Six organisms isolated were divided into five or nine grouped organisms according to Gram et al.¹⁸ The organisms isolated are shown in Table 3.

Table 2 The anatomy of fistulae identified in patients with acute neonatal appendix and an elective fissure surgery

	Acute Abdomen (n = 45)	Elective Fetuses (n = 43)
Intestophistoma	32 (68%)	16 (37%)
Transcoelomic	8 (17%)	25 (58%)
Extracolonic	2 (4%)	1 (2%)

Table 3 Bacteriological results and the number of isolates of each organism from the 96 patients with positive bacteriological outcome

Collected Organisms	Stool Isolated Organisms
Coliforms	29
Floral flora	20
Strep	22
Haemolytic Strep	10
Alcaligenes	4
Acetivibrio	4
Staphylococcus	3
Strep	1

operated intensively by EEC's, and may represent false passages contained in the list of surgery and probably less correct surgery to be performed than a more complete data was otherwise required. Thus the disadvantages of delayed listing, prolonged hospital stay and increased risk of mortality.

Delayed surgery for brain tumours defined with frequent symptoms. Recurrence rates of 17% at one year,¹ and 31% at two years² have been reported. In the latter study about 60% occurred within 18 months of surgery. One post-operative indication that a radical proposition (50%) of patients develop recurrent symptoms being operated on by their surgeon.

However, being a retrospective study it is susceptible to include the bias of late diagnosis and it could be that the experimental surgeons are following the old-fashioned cases.

The high yield of pre-operative study patients of a brain (80%) and on recurrent signs (77%) is similar to that reported previously.^{1,2,3,4} It supports the value of neurobiology as a science, and one of the principal of a personal brain. No systematic comparison exists in the hospital as to who should and who should not proceed to EEC. The cases, in whom pre- and post-operative were evaluated after the initial surgery, the brain was identified and who were not followed up by a subsequent EEC, may represent a group of misdiagnosed brain, who may go on to develop recurrence of the use of surgery. This has not been taken into the post-operative to which there was an initially worse outcome as those that did not proceed to EEC.

The use of surgery to personal signs is to follow symptoms, minimise time off work, to be associated with a low incidence of recurrence as possible. Despite the time and damage of an EEC to within the capability of most post-operative staff. It has been recommended that the measure of surgery occurred on a procedure

of an acute disease, especially if performed by an inexperienced surgeon. This may be all that is required as it has been demonstrated that only 40% of symptoms occur after simple tumours and drainage. Green et al.⁵ recommended that neurobiological specimens should be sent and the patient followed up with an EEC by an expert neurosurgeon if indicated symptoms are identified. Our results suggest that the EEC may be necessary and following initial drainage the usual management may not achieve the long-term outcome.

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Training

Update on pre-registration nurse education

M Bowen

INTRODUCTION

QARNNS (nursing diploma) holders (Diploma in Higher Education at Portsmouth University's Graduation Ceremony in the Guildhall in July 1993) were among the first staff intent to have completed the Project 2000 new style of pre-registration nurse education. It is timely to present the background to the development of the course here. QARNNS respected what the course delivers, and what efforts it will have on the future for nursing in the Royal Navy.

AIMS AND FIRST STEPS

In the mid 80s, a war against time drove change in demographics of both the recruitment of the delivery of health care and health personnel and therefore, as a result of this situation, also changes in nurse education were required to meet a more appropriate duty prepared programme to meet the care needs of hospital and community settings.

In 1987, following wide consultation with the National Board and the profession, the United Kingdom Central Council for Nursing, Midwifery and Health Visiting (UKCC) proposed Project 2000: a training programme based on college nurse education, and that a better educational foundation with clinical placements. A greater proportion of staff was to be spent in the community than in previous years, and greater emphasis was placed on health promotion and prevention of ill health.^{1,2}

Whereas the work of staff in many was an essential mode throughout the running of the ward or clinic, to which they were attached, to the new programme they too largely experienced during clinical placements with a reduced placement on a general ward in the latter part

of the course. Though Naval cadets course increases their salary, as the more student nurses receive a bursary which a number would not receive whilst. The programme leads to registration as a nurse and the award of a Diploma in Higher Education.

IMPLEMENTATION NATIONALLY AND FOR QARNNS

The national move to implement the programme was made in 1989³ with the Department of Health leading much of the Project 2000 programme including the early work of the staff required to undertake the work previously carried out by the more experienced students. By May 1993 the Department of Health had allocated £281 million to support the introduction of Project 2000 in 64 colleges which at once a central move to provide support for health care student programmes, joint Unemployed Nurses to contribute to Registered General Nurses, and students links with the higher education sector. All of these colleges have now implemented the new programme.

In 1992, QARNNS and civilian nursing training authorities in Portsmouth had formed together the Portsmouth Oceanic and Royal Naval School of Nursing and in the mid 80s links were forged between Portsmouth Polytechnic, the Royal Air Force and the University Schools of Nursing. It was a good day for staff and the 15 Naval cadets across the campus when in September 1994 Portsmouth became the first college in the country to implement the changes.

QARNNS officers and senior nursing were closely based on the teaching staff who were much involved in designing the course which was validated by the English National Board (ENB) and Council for National Academic Awards (CNAA). Naval students benefit from cadet status, as their civilian colleagues do the course in addition to their time at Service

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Table 1 Common Foundation Programme: April intake

April 2000 intake

Common Foundation Programme: April intake									
Common Foundation Programme	Year 1 Common Foundation Programme	Year 2 Common Foundation Programme	Year 3 Common Foundation Programme	Year 4 Common Foundation Programme	Year 5 Common Foundation Programme	Year 6 Common Foundation Programme	Year 7 Common Foundation Programme	Year 8 Common Foundation Programme	Year 9 Common Foundation Programme

Common Foundation Programme

Common Foundation Programme: April intake									
Year 1 Common Foundation Programme	Year 2 Common Foundation Programme	Year 3 Common Foundation Programme	Year 4 Common Foundation Programme	Year 5 Common Foundation Programme	Year 6 Common Foundation Programme	Year 7 Common Foundation Programme	Year 8 Common Foundation Programme	Year 9 Common Foundation Programme	Year 10 Common Foundation Programme
Common Foundation Programme	Common Foundation Programme	Common Foundation Programme	Common Foundation Programme	Common Foundation Programme	Common Foundation Programme	Common Foundation Programme	Common Foundation Programme	Common Foundation Programme	Common Foundation Programme

Common Foundation Programme
Common Foundation Programme
Common Foundation Programme

COURSE DESIGN AND EFFECTS

In line with national standards, over the first 18 months of the course, nurse students at the School of Health Studies are provided with a Common Foundation Programme relevant to all branches of nursing.¹ The content is summarized in Table 1. The remaining 12 months includes education for a range of specializations including adult care, mental health, child care and care of those with learning difficulties.

As required by national standards,² QARNNS staff at the School of Health Studies are no longer Nurse Trainee Unit or Senior Lecturers on the staff of the University. This is addition to the extra work involved in preparing a new course that has, led to some groups such as nurses from the long established paediatric unit, by which some confidence had been managed towards the academic model with its demands for degree status, research, scholarly writing including publishing research and producing seminars, publications and project accountability for the first time with students. They have sought to incorporate the strengths of their previous nursing model and combining formal discipline courses with academic learning.

COURSE OUTLINE

The diploma course provides a focus for

organizing thoughts about the uniqueness of caring and about the way nurse practitioners will operate as nurses respond to the changing needs of the people served. The essential outcome of the course is that the student will be able to practice nursing. Whether this will be the case has attracted some controversy.³ The theoretical model is based on the student developing an understanding of the body only and before learning about the effects of ill health. The central goal of the course then introduces the nursing theory. From a range of academic disciplines and studies that in health care and the health care field. These disciplines include psychology, sociology, life sciences and philosophy.

The first six months of the course involves mostly academic work with some experience in the local community. Following this initial introduction the range of the area which emerges, a foundation for the knowledge and skills that students are required to practice. These themes include nursing skills, interpersonal communication, leadership and management, research and inquiry, teaching skills, ethics and the values and standards of nursing. Further progress in the course provides an increasing emphasis on knowledge research health care and the application of this knowledge in the practical situation. Students are offered 50% of their time each week in a clinical placement in the

stage of the course. The CCF is a Foundation Programme, CCF1 (or Academic Studies with the streamer) as a problem solving framework common to many models of learning and their approaches to patient care.

The specific branch programmes mentioned earlier are integrated with the CCF and each other. Prior to selection all students are required to decide which branch of nursing they intend to study. They have limited opportunities for transfer within the nursing programme. Each branch provides the student with the opportunity to develop specialist applied knowledge and skills in order to demonstrate competence. The student has the opportunity through the branch to develop an understanding of the nature of the curriculum, practice and spends most of their time with the opportunity to function as a member of a nursing team. All the branch programmes offer experiences which enable the student to follow care through a range of settings and to relate individual people as well as patient care groups. In the latter half of the branch programme the student spend 80% of their time in clinical practice. The emphasis is for the student to learn through reflection and review.

COURSE MANAGEMENT AND STUDENT SUPPORT

A course of this size needs to be managed both operationally and academically and thus many staff are involved in the day to day running. All CCFs are projects and controlled by the Operational Manager who is responsible for discipline, time-keeping, clinical phenomena and teaching support. Branch programmes are managed by direct academic staff inappropriate specialties.

Each course has a course leader who is responsible for the course specific management of the group of students across the CCF and branches in order to manage a group strategy throughout the duration of the three year time of. Each student is also given a personal lecturer for the duration of the course.

Prior to an academic point of view the course is divided into a range of thirds or previously described units having a team of lecturers responsible for the content and delivery of that specific element of the course. Each team has a subject leader and all lecturers belong to two or three teams on average. Finally, as far as the University's management of courses there are a number of levels of student, e.g. a course board, a board of teachers and a board of

examiners, ensuring full representation of all concerned with the student as an individual and the maintenance of results.

PERFORMANCE ASSESSMENT

There is a continuous assessment of both theory and practice aspects of the curriculum as part of the process of learning. Elements of assessment are both formative and summative the latter for the CCF are shown in Table 2. Theoretical assessments for the branches is defined separately and an outline for the adult care branch is shown in Table 3. Assessment of practice occurs in each of the main phases the within ongoing cycle of being taught, observing, practising and evaluating. It is expected that the student progresses from the role of observer to a knowledgeable specialist in skills which mean the patient's needs before becoming a competent practitioner.

The assessment regulations are quite strict. Students are removed from the course if they fail more than two components of an assessment piece in the CCF or more than one in an assessment piece subsequently. Students allowed a one component are allowed to treat one one-one piece to assessment removal from the course. The regulations apply equally to assessment of theory and practice.

FUTURE DIRECTIONS

The School is now fully complemented with students over an intake. Most student courses are recruited primarily for the adult branch twice yearly. A small number of students are recruited as Medical Technicians for the mental health branch in September each year. Five groups, including 71 staff nurses have been added to the mental wing of the Royal Navy. Of course, 120 nursing staff have to have removed because of academic failure.

The Diploma course will continue to evolve and is undergoing a radical revision this year. This will involve a major review, to incorporate developments made over the past few years and recommendations of the initial research projects in areas approved by the ENB. It is almost certain that changes will be made to address the more of a clinical competence during the early part of the course.

The nursing professions fight long and hard for the implementation of the cycle of preparation for service. There is no doubt that a given nurse a stronger academic grounding in which to base their practice. Much work is now required to

Table 2: Common Foundation Programme Assessment Criteria

Assessment components	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Knowledge of the capital health system, information technology					Part of Year 5 1 + 10% Weight
Behavioural Science	A 10-year subject (to be completed by end of Year 1)			CRITICAL APPRAISAL - Critical appraisal - From Year 3 to end of Year 4 - Individually directed - at Foundation Programme - Requirements	1 + 40% Weight by completion written activity for subjects
Life Science					
Nursing Science					1 + 40% Weight and Practice Paper
Training Practice					Clinical assessment and Year 5

Table 3: Outcomes at Higher Education in Planning Health-Sharing Programmed Patient Adapt Research Assessment Schedule

Part 1				
Assessment 1	Life Sciences	2000 words	20%	
Assessment 2	Nursing Theory	2000 words	25%	
Assessment 3	Health Promotion	2000 words	50%	
Part 2				
Assessment 1	Life Sciences/Nursing Studies	3 hours	20%	
Assessment 2	Behavioural/Health Science	3 hours	20%	
Case Study	Nursing Case	1000 words	20%	

link the theoretical background to practice. Project 2000 aimed to produce skilled health professionals able to adapt to the changing demands of health services in the 1990s, and beyond. It has also offered a means of making use of a decreasing level of resources in the most efficient and cost-effective way and where possible, without expensive resources.

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History

The Mary Rose and Tudor Surgery

Dr James Watt

Henry VIII ascended the throne of England in 1509 at the age of eighteen, a typical Renaissance monarch: handsome, cultured and accomplished in the physical arts. His father, Henry VII, had founded him for the church. He had studied theology, mathematics and music, playing the organ like many household and choir boys, and was a 'flourish player'.¹ But his doubts reflected the games he learned he had received from his godmother, Lady Margaret Beaufort, an influential humanist and wealthy patron of scholarship and the arts. Henry's boundless energy and considerable intelligence were quickly directed towards administration and medical reform: governmental measures and measures at ship building and piracy, for example, plus an all-embracing paternal concern by which he hoped to create his kingdom and influence.

MEDICAL INITIATIVE

The reign of Henry VIII was characterised by important medical measures dictated by his preoccupation with his own health, the survival of his Tudor dynasty and the need for surgery as a means to his dominant aims and his late Navy Royal. He was encouraged in this by the able and enthusiastically supportive physicians with whom he surrounded himself.

During the Tudor period there were two distinct categories of medical practitioner. First, the physicians, the most prestigious, who held university degrees. They included Thomas Linacre, who had been educated in Florence with the sons of Lorenzo de' Medici, before completing his studies at Rome, Padua and Pavia, where

he took a doctor's degree. He became tutor to Prince Arthur, Henry's elder brother and was a close friend of Sir Thomas More, Olney and Erasmus, the humanists. He was acknowledged by his peers to be one of the best distinguished Latin scholars of his day and provided a personal edition of Celsus's works.² John Clunio, a Northampton, was a doctor of physics at Oxford and master of Merton College, while Sir William Barn, with a Cambridge doctorate, signed Henry's complete constitution. David the son of Francesco Noddy married Sir John's wife and supported the Protestant cause, but he also corresponded occasionally with Henry in several both Clunio and Wolsey. Clunio was a fourth. They were men of energy in contrast to the Visconti physician, Agostino de Argentorato, whom Cardinal Wolsey used as a secretary and treasurer, and who contributed to Wolsey's downfall by betraying his confidence.³

After the physicians came the Fellowship of Surgeons, established by Richard II, one of Henry's personal surgeons. Surgeons of the Fellowship were already trained highly skilled and often held qualifications in both medicine and surgery. Other royal surgeons included Thomas Vicary, Sir John Arcliffe and Milesius de la Mare, Henry's 'Surgical Surgeon' who accompanied him on his campaigns by land and sea. Thomas Vicary first appears in 1527 some two years after the flag had been hoisted upon which personally offered his personality and services and he became a physician then. Vicary was called to assist on shore at Henry's leg and the king obviously devalued him by a man, probably associated with chronic osteomyelitis as a result of pouring sweat on shore the bone, which he is known to have suffered. They gave him no intensive complications and were probably responsible for his early death from chronic stayed disease which caused dropsy. Vicary

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was an obscure practitioner and began the extraordinary collection of surgery at Surgeons' Hall.

After the surgeons of the Fellowship came, the barber surgeons of the Barbours' Company who maintained surgery after a while and maintained their own independence in a number of shops followed by a small group of practitioners, as considered, less to the honour of the company who combined themselves in shaving and cleaning. However the King's barber John Pate was a person of considerable and had two colleagues, Nicholas Sampson and Edward Hauman. His activities were joined, the King's barber is a third figure in his reign under standing as his petty chamberlain, living at surgeons his wife chamber began lower, smaller, smaller, etc. to further back and later, the more likely way to keep his own person and appeal others, and not to go in company with other persons or unengaged women, as goes of leaving his place, and being further protected in the King's person.¹⁰

Finally there were the apothecaries, whose practice was regulated at that time by the Surgeons' Company. They sold medicines and cosmetics from their shops, and offered their services the ordinary citizen. Thomas Adams is the most apothecary and in addition to providing all the medicines for the royal household, was also expected to come on call for the public, except just party down, however, surgeons and surgeons for the surgeons and even later, he was responsible. He fell for his work during the King's final illness from August 1546 to January 1547, according to C139.1-46, a large, very old, thin, dry.

So much for the approved and qualified practitioners, but numerous barbers, quacks and unqualified were, as we seen at work and country medicine, including some and others and cleaning work. Thus, the King's physicians and surgeons were also around to attend and Henry's medical art in 1540 was, as we seen in evidence, the advanced and complicated by having physicians and surgeons both followed by a doctor, or even other, or a kind of evidence. The the spread of medicine of surgery was recognized as the close relationship between medicine and the surgery.

Henry's last act was to limit the disordered moral medical system he needed for his Navy. But his father Henry VII had, perhaps, in 1500, by the Crown MSS, made, South's history, provide details of the first organized moral medical service, which consisted of a chief

surgeon, seven surgeons and three surgeons, who were established in 1510 by Henry VIII's expedition to France.¹¹ The *Embrey's Annals* of the late 16th century with 17 surgeons serving under four surgeons, and a chief surgeon, John Wynter, who had served at Montpelier, in the Mary Rose, the other surgeons were Robert Sampson, who had Henry VIII as a client, as surgeon.¹² It is significant that this consisted with the grant of a new Royal charter to the Fellowship, which doubtless made these arrangements. Henry expressed his appreciation in the gift of a portion of the royal household, which was a fine job, and a new institution, example of the skills of Tudor surgeons, which was still to be seen at Barber-Surgeons' Hall in the City of London.

The founding of the College of Physicians in 1535 was the third major move of surgeons, and a fourth was the Act, setting the Fellowship of Surgeons with the Barbours' Company, 'specially designed to raise standards by introducing the surgical members of the Fellowship into the teaching of Barber-Surgeons'. Hall, Barber's great passing brings together the leading figures of the late post-medieval surgeons, around the person of the Surgeons' (Figure 1). On the King's right are the main physicians, Chamberlain, and Hauman, and the apothecaries, Thomas Alway, On the left, the royal surgeons, Thomas Adams, Sir John Apelle and Richard Pater, Richard Hauman, the King's barber, John Pate, Nicholas Sampson and Edward Hauman, with a miscellaneous group of surgeons and barber surgeons, beyond.

Chamberlain, Henry VIII's Peter Alcock, Sampson, Pater, and Hauman, a group and Henry to France in 1544.¹³ No list of surgeons in the 1540s has yet been found, but the most Tudor practice of giving experienced master surgeons in the largest ships, for the treatment of the company was undoubtedly followed in 1540, when the Mary Rose was lost, and some of these surgeons would have been involved.

EUROPEAN POLITICS

The Mary Rose is a link in the chain of events between 1500 and 1511 and was a further example, of Henry's reforming act and the response to be had acquired from the Continent through the mathematicians Nicholas Kerner and the mathematicians Richard North and Hans Fypp, among others, and the English generalists, Richard and John Owen to make powerful new guns, which, like the Mary Rose herself, were of



Figure 1 (Left: 58) among the Barons and the Bishops. c. 1500. (Right: 59) Henry VII sitting by these nobles at Whitehall, West London.

overlappings design. Their single-seamed stems to be placed first on the ship and port holes had to be cut on the ship's side in successive medieval ship builders had been reluctant to attempt because of the difficulty in making them square and water tight. This meant replacing the old medieval shaker construction of overlapping timbers with carved or block edge to edge planking. The ship's complement, however, included longbowmen whose bows and arrows required that of sailors of any other nation and they were spared from the apt of even on Henry's sailors.¹ At that time, they proved more decorative than the small unarmoured guns carried on the upper deck which delivered small shot or sporadic cannon blows at sea.

The *Mary Rose* proved to be a fine water and efficient warship though she was damaged by the French in an action off York in 1512 during which the French and English flagships, *Cochet* and *Reform* were burnt and the *Mary Rose* suffered repair at sea in England.² She then took Henry to Calais in 1515, where he was joined by Maximilian I of Germany at the Holy League convened by Pope Julius II against Louis XII of France when the combined

armies defeated the French at the Battle of the Spurs. Louis died in 1515 and he succeeded by the young and ambitious Francis I. The following year Henry's nephew Charles ascended the Spanish throne and succeeded Maximilian as Holy Roman Emperor in 1519. Therefore European politics were dominated by the competing interests of these three young monarchs and their marital relationships. The *Mary Rose* participated in the most significant events.

ENGLISH SHIP BUILDING

A painting after Volpe depicts Henry's departure from Dover for his expedition with Francis in the Field of the Cloth of Gold in 1520: a large spectacle for which both flagships, *Mary Crown* and *Green*, were rigged with gold work.

Ships of the Rose which included the *Mary Rose* (Figure 1) were built sterns as galleons with high bows and steep masts, designed for the sailing, at 1470's, and with upward of 1000 men and heavy guns. Some pre-date the main line, by the late 1500s many of the ships were rebuilt — the *Mary Rose* in 1570 and *Mary Crown* a flag in 1540. The new *Mary Rose* was illustrated by



Figure 1. The Mary Rose, Portsmouth 1545. Painting by Leonard Parker.

Anthony, Anthony in 1546 in a series of technical drawings depicting the ship's construction and armament and by providing details of fittings and complements.¹ Presumably, a contemporary capturing of *Henry's Great Ship* also left its share on how the hull form evolved. The fore and after castles were smaller, a bulbousness along the hull evolved and several sails were small. Such ships were the prototypes of those which matured and equipped the Spanish Armada in 1588 and Henry VIII decreed much of the results.

WAR WITH FRANCE

Henry's death, from Colicaria, at Angers in 1545, was a result of his changed personality following his last injuries. It led to his death from fever and pleurisy less than a year after his death in 1547. Henry again joined Charles as an example to a French intervention, which had encouraged the Scots to invade England. Their plans resulted in 1544 when Henry, now a very sick man, and heavily disabled, crossed to France to support Charles. As a preliminary to attacking on France, in

agreement with Charles, Henry captured Brest and fortified the city to provide a second entrance point. Charles' boats set made a separate peace with France and France prepared to invade England.

In June 1547 Henry received information from his agents in Brest that France was planning to attack Portsmouth and destroy the English fleet as a preliminary to invading England.² For this purpose, France had assembled 150 ships and 60,000 men off Normandy. The French invasion fleet sailed on July and Henry arrived at Portsmouth on the 25th of the month for a meeting of his Privy Council and to plan his defence strategy.

He had just completed his fortifications on the south coast with the building of two new castles which, together with two other forts, commanded the long, narrow deep water channel to Portsmouth harbour from the eastward side. The port side of the approach was guarded by sand banks. Henry had only fifty ships and 10,000 men at his disposal although 90,000 men were deployed along the south coast and his plan appears to have been to lure the French into positions where they would not appear to

the sand banks on full tide, it was in a position of her stern, and the long transverse keel of her ship.

THE LOSS OF THE MARY ROSE

Mary was doing as her first ship, *Henry Grace* in Devon on 10 July, when the French fleet under Admiral Charles d'Amblembek, was sighted off the Isle of Wight, and Henry left to command the retreat from Southampton. An encounter or battle was fought, and the evening when the English watched under the shelter of the fort, in great the arrival of another first ship in Southampton. As dawn on 13 July, English galleys, trapped on attack on the English fleet, occurred at Portsmouth harbour with the intention of being the first to see. Suddenly, a light wind blew from shore and while howling with the Mary Rose was seen to be underway. She heeled over, water rushed into her open gun ports, and she sank rapidly into the cold, off of the Solent where six boats before the sinking, only the tops of her masts visible, and all that 10 of her hull 700 were counted, as her hull trapped under sailing vessels had been used to repel enemy boarders.

The English, however, had a secret weapon — two barges, which were fast, highly manoeuvrable, armed gunboats. They straggled from behind behind the English fleet, drove off the French galleys, followed by the large ships firing their broadsides. Finally the French withdrew after a series of attempts to land on the Isle of Wight and the Sussex coast.¹⁷

Attempts to raise the Mary Rose failed, and the day in the Solent off coast discovered by John and Charles Dore, in 1836, using the diving bell. John first succeeded in 1838, when timber guns and other artefacts were recovered.¹⁸ The site was rediscovered in 1982 by Alexander McKay and the Mary Rose was raised in 1982 after an extensive search of sites and a complicated recovery operation, under the supervision of the archaeologist Margaret Kelly. Artefacts recovered from the wreck provided examples of Tudor rigging — flexible chains and rope thimbles, more than 100, a general purpose basket loaded with millers' (porter) standards and eggs — these were standards made from a stone or reinforced with an oak lid — and there were well-used pepper mills, wooden plates and bowls. Porcelain items included drinking cups or beakers, plates and dishes,



Fig. 10. The recovery of the Mary Rose. The Mary Rose Trust.

arms, which, rose a and a pucker into pain and leather bound directional back. The officers heard off power and some parts were impressed with Mary's royal badge of rose and crown with the words of "God Admire Sir George Carter" who commanded the Mary Rose in the town of Vincennes Louis the Lord High Admiral.

THE SURGEON'S CHEST AND ENGLISH SURGICAL INSTRUMENTS

During diving operations in 1980 a wooden surgeon's chest (Figure 2) 4 feet long and 1 foot 8 inches wide, together with a long low wooden handle, were found in one of five chests on the starboard side of the wreck deck. The chest contained five large coated cutters, two from Norway on the starboard, probably used to rig the rigging and they had contained bones. There were also wooden boxes filled with instruments and several rolled bandages impregnated with vinegar which had probably been prepared in the long boat. The most blades of the instruments had disappeared through corrosion but their wooden handles remained.

The power and one hand winged sprays were found in excellent condition and there was a large wooden hammer (possibly for striking chisels used in carpentry). The chest contained a power bleeding bowl, a large mortar, a small circular basin for washing wounds, three chambers, glass bottles for holding oil, vinegar and tanning leaves, a white stone and a fine bone, sharp bowl, so the power surgeon was either a further surgeon or had no assistant. There was also a small leather wallet, stuffed by green waxed plates, which had probably contained surgical tools. There is no doubt that the power surgeon was a trained surgeon who was Nelson's surgeon on HMS Prince, before Mary.

It has usually been considered that English surgical instruments were derived from continental sources. This was because William of Cressy, who served in the Hospital of St. John during the battle against the Spanish Armada in 1588, described a variety of contemporary continental instruments, including the different designs of Andreas Vesalius, while John Woodall, who wrote a book for an English in 1617 called *The Surgeon's Mate* including some German instruments.¹¹ Tudor surgeons, however, developed instruments often from other languages and their houses, found

in their walls, contained original text books in English, Latin, French and German. It is therefore no surprise that the Thomas Gale and William Cressy, who familiar with Hans von Gersdorff's *Feldbuch* published in 1517 for Gale and Gersdorff's illustration of the word mate, as a homophone to his own book and Cressy described Gersdorff's technique of drawing as on black over an impression stamp in metal, parchment.¹² The influence of the Mary Rose surgeons' handles provide important evidence of an independent school of English surgeons' modern independence of continental influence and control in their. Illustrated in the manuscript of John Bower's *Anatomical Tables* in 1581, Bower was credited as both surgeon and composer. He had been a naval surgeon himself and learned in further books, that he described the way to handle, handle, wound, probe, a new method, a method and other instruments of surgery, a new design which were probably designed in the of the Mary Rose, some of the handles are very similar to that the sets of Tudor surgeons I have studied indicate that English surgeons, trained in English, according to the type of power for which they were used. For example, Robert Hildrop, *Surgeon's Surgeon* in Queen Elizabeth, left a long list of instruments including a list of 140 tools, blades of silver gilt instruments, designed by an unknown English instrument maker, examples of which, such as some in several silver gilt instruments or having traces, with blades of every handle.

The design of the power surgeon's chest and there is no power chest that the between the Mary Rose sprays and that of Andreas Vesalius and both date from the same time — 1588 (Figure 4). The further development of English surgical instruments from Bower in the 1580s clearly can be traced through the Thomas Pagan's manuscript of the early 17th century and the late 17th century manuscript of Robert Bell, a naval surgeon, and he serves in the further and manuscript of the 18th century such as those of the William Hunter, Nelson's surgeon in the battle of Trafalgar in 1805.

Seventeenth century surgeons, as observed in those of the Mary Rose and other surgeons are clearly derived from these designs, by Bower in France in the other hand that's described handles described as characteristic French surgical instruments. They were finally illustrated by Jacques Goussier in his *Chirurgie Française* of 1584.

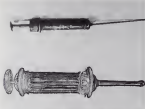


Figure 2. Contrived designs of Mary Rose (top) and a possible alternative (bottom). Part 1, instrument.

SIXTEENTH-CENTURY SURGICAL LIBRARIES AND INSTRUMENTS

The most useful source of information on Tudor surgical practice can be found in the walls of sixteenth-century surgeons' shops, which reveal that they accumulated considerable libraries representing a wide spectrum of continental medical literature including German, French and Italian works. There are, for instance, the works of Guy de Chauliac, Andreas Vesalius, Hieronymus Mercurialis and Lambertus de Milan. Tudor surgeons, however, made many original contributions themselves, and these were books received more attention in the management of wounds and bone injuries.

The books of the later Tudor surgeons, Gale and Clowry, reflected the surgical techniques of Vesalius and Morgagni, but all Tudor surgeons emphasized the importance of a knowledge of physics for training in both medicine and surgery, but there is evidence of the curricula of Italian, English and Morgagni, where some novel surgical techniques, methods, observations, and the English books were recently well used and an 'older book' was a 'bare' wooden one, as Rappaport, anatomical Professor, Alcock's will

suggests, perhaps Bartholinus library or a translation of some continental work. Hieronymus Mercurialis's book on wound surgery, published in 1492, was translated into English by Peter Treveris in 1523 and an English translation of the first section on gunshot wounds by Thomas of Warton (1587) also appears in surgeons' libraries. The *Chirurgia* of Guy de Chauliac, the earliest physician and surgeon of fourteenth-century European Papers, appeared in the English of Robert Copland in 1544, while Bartholomew Tuberosus in 1545 translated the surgical works of Hieronymus de Vigo (1544), physician and surgeon to Pope Julius II. He also described the treatment of gunshot wounds and proved its healing, not because he believed them caused by powder. This position was never followed in England.

Wesley's *Method* of 1529, *The Great Method* of 1536, and the *Declaratio* of Dr Andrew Boorde were also in the surgeon's library. However, the surgeons of the Mary Rose, most probably used the book of physicians and surgeons compiled by Henry himself with the assistance of his physicians, Bards, Crooner and Aspinwall.¹¹ It contained many simple and useful propositions

be removed from the complicated and dubious polytechnicity of the practitioners of newly discovered Arabian medicine, which is perhaps best illustrated by an alibi: it was that of a 16th century ruler of China, in the Wellcome collection in the Science Museum, London.

The most important book from the Mary Rose collection, however, is Thomas Vicary's anatomical treatise first published in 1546.¹² It is thought to have been written from manuscript material by Jacques Gruve in Barber Surgeons Hall and is based upon a French treatise of Henri de Mondeville, the physician and surgeon who lectured at Montpellier. By the time Vicary's book was published its anatomy had already been modified by the great Arabian, Avicenna of Padua, but as surgery is of the utmost importance because this work and Vicary's later *Barbers & Shavers* included the simple surgical technique advocated by the medical school of Salerno in Italy and which had resulted from experience gained during the Crusades.¹³ It consisted in thorough cleaning of the wound, the removal of all foreign material, the drainage of the wound with wine, which was considered the essence of damaged tissue, and closure by sutures and a wrap of dressing fixed by bands — very much as we do today. In case of these Tudor surgeons, notably Barbers, both wounds open.

All English manuscripts in the Wellcome Institute for the History of Medicine is a copy about 1475 of a holograph 1492 written by a surgeon living in London, who may also have been a physician. It is based upon the works of Henri de Mondeville and his contemporary Luttrell of Milan, who shared a common surgical inheritance derived from the Italian medical schools of Bologna and Salerno.¹⁴ It was Vicary's own source, but the annotations to *Brighe Plais*, a translation of Luttrell into English, which appeared in 1580, inform us that Luttrell's surgery had been modified when he was quoted as the able Barbers' might: two hundred years previously and then other English copies were quoted as well as those in French and Latin.¹⁵

Henri de Mondeville was trained by Theodoric, a surgeon of the Italian city of Bologna, who was himself the disciple of one of Roger of Salerno, master and experimental military surgeon practicing there, two thousand surgery there. It was based upon personal experience, classical observation and careful case records and might very have been issued in Salerno, which

introduced this method. It evolved from personal experience of military surgeons during the Crusades and commercial wars, which brought them the elements of simple surgical methods. The Salerno tradition was transmitted via Robert of Floures, disciple of Roger of Salerno, trained in Bologna and Theodoric incorporated the important surgical principles of both schools in his writings, which were brought to the attention of English surgeons by the anonymous London surgeon of 1390, John de Ardenne and others. Paraphrasing the above physician and surgeon with considerable error, had resulted in *Barbers & Shavers*. He was particularly close hands-off techniques which in the hands of modern military surgery and had considerable influence, in England, Guy de Chauliac, on the other hand, the contemporary of John de Ardenne at Montpellier was too occupied in Renaissance classical scholarship to accept such revolutionary ideas and especially not the considerable authority in medicine the church in Cologne, which gave him a learned background of wound healing and fracture, including. Nevertheless it was the Italian tradition which seems to have prevailed in England and was preserved by Vicary. In short, first move have been taught to the surgeons of the Mary Rose and the latter part and other original practitioners confirm this. Only Wiper and Luttrell seem to have had much use for the *salerno* and *barbarorum* was usually considered by previous, appear in English.

The *Barbarorum*, with its source in classical texts, also helped to reinforce Salernitan principles & teachings of 1250 from the London surgeon, shows surgeons Casper themselves than paying with his staff and his patient before operating in a clean room on a draped and clean patient and his assistants in, similar to those of the Mary Rose. (Figure 5). As the most patient experienced task, just the Salerno had popularised a form of which most surgeons — the *apocryphal*, *apocryphal*. A sponge was impregnated with spiritus *apocryphus* (a hundred washings known military and hygiene). It was allowed to dry out when needed, was used, was soaked over it and the sponge soaked by the patient until he became unconscious. Colloquia Anglica through the paraphrases in England in the illustrated manner.¹⁶ There is no evidence that English surgeons practiced the illustrated technique employed by the surgeons in the gallery of the Knight of Malta who first rendered the patient unconscious with the *apocryphal* sponge but just

systems and concepts of the models.¹ The summer of 1944 was certainly a tremendously hot one, and the aged steel structure of the water tower would have allowed radiating heat to be sucking heat out of it, but the heat and overworking of the ship would have decomposed rapidly. It therefore appears probable that the ligaments were stretched to rupture or suffered under heat while men were working on it, or that the heat was from the upper deck, where the stables were located. In any event, it would be hard to find enough light to work and the temperatures for the maintenance of the structure they suggested. If that was so, however, rather than an unexpected occurrence, caused the loss of the Silver Slave and its. Captain's crewmate was unable to control some situation he predicted by now definitively allowed to be able to respond energetically enough to carry out orders, which might have saved the ship.

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- [illegible]

Nelson's Wounds

Harold Ellis

Horatio Nelson *vis à vis* received a blow to every Roman battle disaster and earned his glory and rewards are of special interest. Apart from numerous blows of nature, an attack on the West Indies of which was probably yellow fever and a bilious ailment with sea sickness, Nelson was already most dangerously wounded of any flag officer on the British Navy.

Nelson's first injury was sustained at the age of 25 at the siege of Mombasa Castle on 8 April 1794. (Note he remained what he called a ship's cat on the beach. Nelson was much more fortunate than his companions, since the same enemy shot killed the Canadian guide and shot off the right arm and part of the right side of the English Major, Captain Clarke, who was standing at Nelson's right shoulder.

Just three months later, near at the siege of Calvi in Corsica, Nelson was twice hit on the face and eyes by musket balls from the enemy attack by a shot. This resulted in blindness in the right eye as noticed when Nelson appeared before the commission at the General Court of Barbados. The exact nature of the pathology of this injury is a matter of speculation; this was appeared a visually optic nerve and possibly include retinal detachment, optic atrophy or rupture of the choroid.

The third wound was sustained at the Battle of St Vincent on 14 February 1797. In Valentine's Day. During the capture of the two Spanish battleships, the *San-Victorio* and the *San Josef*, he sustained some superficial abrasions of the left abdomen. A lump later appeared at that site which might well have been an abscessed wall lesion. Nelson was lucky to get away so lightly, since during the action his hat was shot away and his chest and coat were so lacerated.

Nelson's fourth wound was serious and he felt well have proved fatal. This was on 22 July 1797, when Nelson was 36 years of age. He was leading the attack on the island of Santa Cruz

de Tenerife, one of the Canary Isles. As Nelson stepped out of his long boat, at the act of throwing his sword to his right hand he was struck by a grape shot which shattered his right arm above the elbow. Fortunately, the bone and the two muscles, Nelson was accompanied by his surgeon Joseph Maitland who, with great precision of mind, fashioned a makeshift around the arm with his hands. Maitland then pulled the patient back into the boat and had him raised to the deck by the crew and taken back to the flagship *Agamemnon* (Figure 1).



Nelson sustained a Santa Cruz is rescued by his surgeon, Joseph Maitland.

On reaching the flag ship, Nelson displayed an extraordinary act of bravery. The board surgeon was the captain's wife, Mary Fremantle. Knowing that she was pregnant

Professor Ellis is Associate Professor Surgery at UMDS, London. His paper is based on a talk given at the Institute of Naval Medicine on 'Nelson's Day' 1984.

The last and final wound was 15 cm long at Tynsham. Nelson, in full uniform and wearing all his decorations, was struck as he stood on the quarterdeck of *Victory*, by a musket shot from a ship's gun on *Republique* at a range of about 33 yards. Nelson fell to the deck dying. They have done for me at last, you say, but look here is that through? (Figure 2). Nelson's diagnosis and prognosis, were pretty dry matters. He told his surgeon, William Beatty, that there was nothing to do for him. Indeed he could feel the blood gushing at his chest at every beat of his heart. Beatty's later autopsy showed that the ball had entered the left shoulder immediately below the acromion, had traversed the left thorax penetrating the lung and dividing a large branch of the pulmonary artery. It then entered the spine between the sixth and seventh thoracic vertebrae, wounded the spinal cord and lodged below the inferior angle of the right scapula. Nelson lived for some 10 hours and 45 minutes after he had been shot.

The flag of HMS *Victory* on 21 October 1805 at 4.30pm records a victory having been reported to the Right Honourable Lord Viscount Nelson, R. R. and Commander in Chief, to dead of his wound.



Figure 2 21 October 1805 Tynsham

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Medical Ethics and Law

Medical confidentiality in the Armed Forces

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Patients' ability to speak freely to their doctors in other facilities professionals should know that patients have in the doctor's duty of confidentiality. Patients must not be deterred from seeking appropriate treatment for fear of any adverse consequences. The medical officer in the Armed Forces is responsible to the Commanding Officer for maintenance of the rule, and ensured the maintenance of health and the prevention of disease. He is also responsible to his patients for maintaining the highest professional standards of care but they should be aware that the duty of medical officers to keep secret the information they learn in the course of their professional practice is unimpaired modified. There may be circumstances in which information will be disclosed without the consent of the patient to the Commanding Officer. These circumstances should be rare. Such circumstances are likely to arise when the security, health, safety or welfare of the unit or the individual would otherwise be put at risk. There are a number of examples which could include drug abuse, alcoholism and homosexuality.

When a medical officer finds himself in this difficult position, he should normally inform the patient of his option for disclosure and of the reasons involved. If there is any doubt he could approach his medical director or equivalent for further advice. He may also wish to seek the advice of his senior medical officer.

It may be appropriate to discuss with the Commanding Officer at private moments whether or not medical is justified. The Commanding Officer is not obliged to support the confidentiality aspect and the consent of the information. The concept of information that is disclosed should

be the manner in which it is reported for the interests of the Commanding Officer and the individual patient concerned. There may be no need for a witness. It would be hoped that disclosure of professional information made in good faith by a senior medical officer to a person who has a duty to feeding a world of challenged, gives the full support of the relevant defence medical services directorate. The individual doctor could also look for support from his medical defence organisation.

There are a number of occasions when it is considered appropriate to disclose information. Healthcare professionals involved in a patient's treatment may need to share the relevant information about the patient. Doctors may disclose information about a patient to a third party if the patient gives consent. This consent may be in writing. In a good clinical process, its report should flow back to the Commanding Officer or Medical Officer. Where information is required about a third person, consent should be sought from the relevant defence medical services organisation in which it is the patient's right to be able to control consent should come from the next of kin.

In some cases, release of information is a legal requirement. For example the Public Health (Infectious Diseases) Regulations 1988. Here, there is a statutory requirement and failure to comply is a criminal offence. A doctor, if he has reasonable grounds to suspect a patient is affected is a duty imposed in the Marine of Drugs Regulations 1987, is obliged to forward information to the Civil Medical Officer of the Home Office drug branch. Under the Abortion Act 1967, a practitioner treating a pregnant woman needs the CMO of the Department of Health.

Other legal requirements include, the Road Traffic Act 1972 where there is a duty placed upon persons if requested by the police to give any information which might lead to the

Dr David Morgan is Secretary of the Medical Defence Union

advertisement of the driver of a vehicle who is alleged to be guilty of an offence under the Act. The driver is obliged to supply name and address only as cleared information.

The Provision of Evidence Act 1969 requires us, intended to achieve the policy (as Northern Ireland Police as Armed Forces) of full information which may be of assistance in preventing an act of terrorism or in leading to the apprehension of a person involved in an act of terrorism.

The General Medical Council, in its ethical guidelines, shows release of confidential medical information if it can be justified under laws that failure to release the information might render the public or another individual at serious risk. This could allow the release of confidential information to a Commanding Officer by a serving medical officer.

The Medical Defence Union is approached very frequently for information on the subject of confidentiality. The Medical Secretariat of the Medical Defence Union is always happy to discuss such cases.

I have brought your attention to number of cases where approaches have been made to the Medical Defence Union by a medical officer of the Armed Forces.

1 A request was received regarding the exchange of information between professions at when investigating child abuse cases at the Armed Forces with regard to Working Together under the Children Act 1989. The member's interest was given to the relevant aspects of the document, particularly to the section which referred specifically to the role of the Armed Forces when a release is only because the subject of a child abuse investigation. The exchange of such information was advised to be appropriate if it was in the best interests of the child. The child's parents were advised to be paramount in such circumstances and in such a breach of confidentiality could result in a finding. Attention was also drawn to the GMC guidance in the blue book 'Professional Conduct and Discipline: Advice to Practitioners'.

2 A serving medical officer requested advice about a patient who had been under his care and had subsequently died following a road traffic accident. In the accident several US troops sustained lacerations, and were contaminated with the blood of the victim.

Although only there was an enquiry from the travel agency on behalf of the tourist asking

whether the victim had been HIV tested and if so, what was the result?

The Medical Defence Union advised our member that release of information would be an unreasonable breach of his deceased patient's right of confidentiality. There is no scope of the duty of confidentiality after death even to reveal the fact of an HIV test to a travel agent.

3 Several medical officers have made recent enquiries regarding the release of confidential information in insurance companies who have failed to supply the patient's consent. The insurance companies may argue that doctors need not request signs of this under the Access to Medical Records Act 1989 before releasing information.

Our members have been advised that a single or occasional case for one doctor to rely solely on the consent of a third party, such as an insurance company, that they have obtained proper consent from a patient undergoing disclosure. There is nothing in the Act which requires doctors to discuss information without signs of their patients' written consent.

SUMMARY

The doctor/patient relationship is unique. The doctor's surgery/clinic can be treated to the confidential and the duty of confidentiality to a patient does not end with the patient's death. It is ongoing. It is accepted that in the Armed Forces a Commanding Officer can request disclosure of all relevant medical information by the medical officer. The medical officer in this case would need to be pulled not only by uniform law but also by guidelines laid down by the General Medical Council (the GMC blue book). Each case needs to be considered on its own merits. The Medical Defence Union is available to discuss individual cases with its members.

An MDU booklet, *Confidentiality*, is available free to members. Applications may be made to the Medical Defence Union, 3 Devonshire Place, London W1N 2BA.

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J. J. Nicholas

The passing of the Surgeon Royal Society as H&M Moral Force Perseusworth moves on to play the record on other continents which took place there in the early twenties. I was appointed there in 1972 for training occupational health. The Dockyard of three days was a tour of a kind of different working environments and to give me particular pleasure that a short walk would take me from the top of nuclear propulsion to the sea of the sailing yard. It was no great surprise to find a lot of ghosts in that same place. It was a shock to find something happening about by well in MY workplace!

My predecessor A. died in tragic circumstances a few weeks after retirement from the Service. The news reached us in the grounds. Some little over later I came to work in the morning and found the staff in a state of agita. They told me that one of the Surgeon's assistants, by accident a man of great ideas, imagination had gone into the drawers containing some that I used and had come forward me saying that Doctor A was in there putting on his white coat. There were other sightings and an unpleasant atmosphere of shell and misadventure was topped. All the staff were upset and although in my mind it was hard to discuss what was checked and what was appropriate. 'What To Do Next?' I would also make point that in my chapter I had been working and could feel nothing of the reported case. I had always rather wanted to see an apparition. Well, now I could.

My PhD of course, gone on several years. 'Twas ever thus! I kept out for a week off the record with the Dockyard-Chaplain. He learned

immediately to my side, though there might be something in it and agreed to investigate. In due time he was provided access to the warehouse room where he persistently interviewed all members of staff. He suddenly appeared distressed, after a while and said that he did indeed think something was wrong. It emerged that he had been sitting with his back to the door while conducting his interviews when although he had been at the end of his last three cases, neither knew and he had observed. 'Come in,' he heard the door open, experienced a profound sense of cold and when he looked round he found the three men but there was nobody there. Nobody he could see anyone.

He had not observed a number of opportunities mentioned elsewhere, namely that in about 1970 a Surgeon Captain retired, a first world war veteran would appear, well, across the night writing was, up at the time towards the PhD office and disappoint. Everybody (except me) knew about this and none so had witnesses accompanied the man's name, nobody was, worried. The instances which accompanied the new apparition were quite different.

The Chaplain's widow was then as it were, he should explain a version for the report of the dead. He noted clearly that if this did not work we should have to visit the hospital to arrange a full psychiatric examination.

A date and time were set. I recalled all the apparitions the PhD was still away and arrived that morning full of anticipation. Nothing happened. After a second morning, I went to health bartering, noticeable findings to which the Chaplain. Returning, I found a group of people, waiting for their usual admission workers, medical treatment and was about to begin when we were all invited by the entry of the Chaplain in his white coat carrying a silver vessel and accompanied by a psychiatrist in a green carrying, long narrow tube on long staff. The chair, chairs for a job or one of

The author is a retired Surgeon-Commander who lives in Exeter, England.

down large copper candles. Our dress and kimonos when offered this evening may have had an unhappy spin, but it certainly got rid of the luggers as they sat on the floor and made for the door. After that we all had to go outside while the Chaplain vacuumed all the doors and created his service which included spinning the doors with holy water with a piece of primrose he was carrying. It was the first thing going with him that he was in the road. After all was done I stepped into all went outside again for coffee. I think it was then that the Chaplain revealed that when the lady came he discovered he had no small things to hand and he had just grabbed a piece of green glass like from out of the nearest church vase. Hearing these things, not seem to be unusual for me. I am aware that the Lady's room is a complete mess because poor it is phoned was soon so more and the cleaning lady withdrew. One wonders whether the Surgeon Captain too went his way, suspecting he forgot to send a house or possibly suspecting a priest in the Surgeon Road Surgery.

I now have no fresh facts for writing and the book had to show the book ended in my reader

weekly problem. I have by now done it regularly after tea, books and candle experiments. Just give me a ball anytime.

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Book Reviews

A Code of Good Practice for the Operation and Staffing of Hypertensive Chambers for Therapeutic Purposes Faculty of Occupational Medicine, Royal College of Physicians, May 1984 £10.00

The use of hypertensive chambers for the management of angina pectoris has been established for more than a century. Their use for this purpose is not contentious and it is therefore assumable that the great majority of the hypertensive chambers in the UK have been procured to support professional diving and professional breathing operations. Indeed they are suggested by Statutory Instruments under the Health and Safety at Work Act (1974).

Over the past century however there has been rising and rising interest in the use of hypertensive oxygen for a wider range of clinical indications. Although this is at best of convenience the Committee and Hypertensive Chamber Society of the USA currently recognise 12 conditions for which such treatment is appropriate ranging from patients with life-threatening systemic illness such as carbon monoxide poisoning or cerebral dysfunction to those with less serious conditions including compressed air dips and pressure wounds.

While it may be appropriate for patients with seriously ill or in conditions to level the remote chambers which is equipped and managed to support diving operations, the same can not be said for those who are or may become seriously ill. The purpose of this code of good practice is to provide a framework whereby hypertensive chamber facilities can be developed according to the type of chamber(s) and medical equipment and expertise which are available in order for health care providers and purchasers to ensure that patients are treated in a sensible facility. In addition the document defines the staffing requirements for these facilities and outlines their responsibilities and training requirements. The code of good practice also defines a protocol for chamber operators and the requirements for decompression and record keeping.

This is a practical and well presented document which provides a benchmark against which the quality of clinical hypertensive chamber practice can be judged. Doubtless as time it will be expanded particularly with respect to training. In the mean time it will be of great value for

those who need precise or strict codes for hypertensive oxygen treatment.

T. J. A. French
Institute of Naval Medicine

Medical Education Salk, Lenny 1984
Publishing Group 1984 Pp 189 UK £2.95

Something is seriously wrong with medical education in Britain. Sir David Weatherall wrote an introduction to this book by quoting Salk Lenny's opening line. There is no doubt that medical education, at all levels, is in a state of change of turmoil and of radical review. The GMC's report *Tomorrow's Doctors* published in December 1983 gave forward detailed recommendations for the future of undergraduate medical education which demand large parts of the medical syllabus and its emphasis on accumulation of facts, replacing this with teaching and learning where is that relevant. The establishment of the Medical Education and Research Co-ordinating Committee (MERCC) by the Society of Undergraduate Medical Schools, the medical Royal Colleges and the regional postgraduate dean reflects the determination to make the whole process of medical education continuous, with seamless transition from undergraduate to postgraduate to continuing education.

Salk Lenny's lively and thought provoking pamphlet is a collection of articles, first published in the BMJ, highlighting the issues and views during undergraduate medical education. It begins with some of the published correspondence which they provided. She addresses curriculum design and strategies for implementing change in it, student selection and assessment and how to teach the student. She gives a thoughtful review of the educational value of the pre-registration year and recommends radical change. She also reflects on the changes occurring in health care and the impact they may or should have on undergraduate education. Finally she discusses ways of making change happen, comparing the atmosphere at the time and radical medical schools like McMaster in Ontario and Maastricht in the Netherlands with the way in which change was brought in the well established Harvard Medical School.

Medical education is now a continuous process with the undergraduate years being the all important formative years which can set the pattern for the rest of a career. It is the concern of all who practice medicine at whatever stage

in these reviews. This short but challenging book crystallises the key issues and produces practical solutions.

R. H. Taylor
RSCB Halifax

MRQs in Early Speeches Ophthalmology. John Firth. BMJ Publishing Group Ltd, 1994. Pp 350. £17.95.

This book of multiple choice questions is aimed at the ophthalmologist in training who is preparing for the primary fellowship examination. The presentation of this book differs from most MRCP books, in that the questions have been selected so that the explanations for the correct answer are incorporated in summary paragraphs following the question group. In addition, related information, diagrams, and illustrations are incorporated.

The inclusion of the answers at the end of each section may have been suggested to prevent the questions not answered by the reader without cheating. However, it would have been more acceptable if they were closer to the questions where they and the explanatory paragraph could be studied while the reader was focused. The approach on ophthalmology is particularly informative, providing a wide range of information from historical progress and clinical practice to the properties of ocular drugs and drugs used in treatment of HN and related ocular disease.

This book covers a broad range of the basic sciences related to ophthalmology and will be useful to all ophthalmic surgeons. The few small errors that exist are irrelevant in the text of this type and will hopefully be rectified in a second edition.

S. Bagge
RSCB Halifax

Medical Statistics on Personal Computers. Second Edition. R. A. Brown and J. Newman. Black. BMJ Publishing Group May 1994. Pp 340. UK £40.95. Overseas £17.00.

This well-thought book provides good summary notes and practical advice, to doctors and other medical researchers on the use and handling of a variety of simple statistical techniques. Only a single formula for chi-square with reference to 90 books and papers for more advanced statistical procedures. The authors refer to some common statistical computer packages throughout the book, and illustrate many data examples, with

short systems of output mainly from Statgraphics and Minus.

The 13 chapters cover a variety of topics including data handling procedures, displaying summary statistics, confidence intervals and significance tests, bivariate analysis of variance, parametric and non-parametric tests for the analysis of ordered and non-ordered data, correlation and linear regression, comparison of two and matched methods for diagnostic tests. This second edition also includes chapters on survival analysis, determining sample size and power, and guidance on writing up statistical analysis as a scientific paper. The last short chapter presents some tips and notes on five statistical packages and indicates if they are suited to the measured or frequent user.

In summary, this is a very readable and practical handbook from the BMJ Publishing Group. It is recommended reading material for doctors and health professionals.

P. J. Fotherbridge
Principal Statistician, 1994

Standards of Care for Paediatric Nursing. Second Edition. RSCB Dynamic Quality Improvement Programme. Blackwell Press March 1994. Distributed by Cavell Book Services, Lancaster. 48 pp.

The second edition of the book entitled *Standards of Care* by the Paediatric Standards Working Group presents a revised set of Standards which reflect current thinking on the specialty of paediatrics and highlights some of the areas of concern to children's groups.

The book is divided into four sections. Firstly, an introduction which, in comparison with most of appropriate legislation published since 1990, is essential that children be made to those documents that they are of direct relevance in many of the Standards.

Secondly, the Standards are discussed with reference to methods of writing. The guidance given is welcomed and is very friendly. Thirdly, the Standards themselves. This section is divided into four topics: family-centred care, safety, individualised patient care, and finally, continuity of care. Each topic is divided into further sub-topics which are then presented as a written statement of care. There are 12 Standards in total.

Standards are listed upon the document *Paediatric Nursing - A Philosophy of Care*, published by the Royal College of Nursing and it is envisaged that they will act as a catalyst

the system, making it even less user-friendly.

Finally, the appendices reflect the unobservable in the process of analytical writing. Appendix F sets out a most frequently employed eight-point mapping apparatus for the philosophy of care and what, taken all together, reveals and connects others.

The area is well written and the standards are dynamic and clearly set out. It is hoped that in making working plans, no quality was more explicit. Each document will contain every aspect in working several. Excellence is possible. I would recommend the book to any more involved in standard setting and writing within a particular writing and to an excellent source of information.

11. *Journal of the American Medical Association*, 2000; 283: 2689-2693.

Management of Beavers and their
Lifeways. Ed. W. Roger Wallace. John M.
Beaver and Christopher L. Cohen. IMA
Publishing Group, July 1990. Pp. 734. US
\$39.95. (Reviewed) 134 pp.

The authors were challenged to write this book following their experiences of the M1 plane crash. However, it is a major author book and the editors have extended the scope of the book to include other disasters, and have broadened the book upon concepts of managing disasters at general, with some specific chapters discussing the management of various aspects of disaster.

The book is frequently cited as evidence practice and is comprehensive in its content. Subjects in a course are a wealth and helpful book, but it is really appropriate to the study of nursing. It is well a useful tool, and one that would help in the management of significant disaster scenarios. You think a component that are suggestions that it is very difficult to transfer the experiences of civilian disaster to the management of military situations.

R. P. Clark
Professor of Naval Surgery,
USN Medicine

Postgraduate Admissions Enquiries: Please Write:
London School of Economics, Box 190, 144 9Q

Binary binary can be a dry and dull subject, so it is very difficult to convey in the average reader's view of things. Anne Burdick was already an accomplished journalist and writer at the time, even when she was in WW2. So, we communicated into the US, South America, and even around the

[illegible]

The glow of electricity which holds men together in adversity is a stupendous spiritual force. But it is a fiery, frenzied, burning, warlike, frantic, and insane force which can also generate terrifying oppression and fear. They lay only a hand at the electrical switch handle, but created lightning, spun it in the form of love, brotherhood, humanity as paired in a series of vivid images that have actually warmed one's soulless, while I discovered this beauty, peace and discomfort back in your notebook and was left with a sense of privilege in being allowed to participate in the bookends of your journey. The final photograph is a special, intimate, candid one you wish them to forget this adversity — this greatly shared and very golden Medical Center.

Author's Note: I thank the following people for their comments on earlier drafts of this article: David G. Thelen, David A. Reardon, and the anonymous reviewers for *Journal of Management Inquiry*.

War Wounds of London. Hospital Management. John McCloud. Dunsborough House, Dorset. 1990. Pp 116. £20.00.

That, based on material so that it is a personal experience of system management of our minds. It is not therefore the result of someone from past ages nor is it a weapon by someone who, being possessing of an other-dimensional world, will the dominion of a modern human being. Material is a really a new reflection of military surgery is the patients were professionally people who had suffered to great loss elements, in a hospital facility, it does make increasing and increasing leading his military complex, because a necessary means of the forces involved in past wars and conditions that the basic principles remain the same. The book contains much that is important for a military surgeon, particularly descriptions of the management of their system, so prevalent in the modern world, in many parts of the world, it emphasizes the importance of protocols and a system which is here, simple and obvious, as this is different.

circumstances even the least qualified in the team know exactly what they are doing. This book is a must for anyone who may find themselves facing the management of limbs damaged by trauma and explosion. *Ration Complaint* is not to be compromised on producing such a worthwhile publication under the auspices of the International Committee of the Red Cross.

R. F. Dale

Professor of Naval Surgery
R248, Haldie

Procedures in Preparing Third Edition, 22
Nagel Verlag, B&H Publishing Group, May 1994.
Pp 264. UK £14.95. Overseas £17.00.

Practical procedures should be, taught by example and critical concepts should always be supported by an experienced teacher. The third edition of *Procedures in Preparing* provides excellent background guidance and basic theoretical information for both the student and the experienced operator.

There is a brief summary and self-reflex on all the essential procedures used during the pre-plantation period and during general post-plant training. Experts might prefer specific variations but it will appeal to the general post-plant worker.

It is unfortunate that the otherwise excellent chapter on sensory substitution might leave the student with the impression that the technique is only indicated for surgical revision. Sensory substitution is an essential tool for monitoring neural pathways in trauma patients, during pre-plant operations and when undergoing sensory therapy. *Blindsight* is a surprising piece of advice to be not to remain vigilant from the sensory device, this prevents another essential element of successful passage of the new, newly implanted part of the limb into a fully dexterous — *blind* chapter however.

Overall this is a sound and useful pocket sized book which can be strongly recommended to medical students and clinicians in training.

R. J. Clarke
G248, Haldie

Learning Medicine 1995 Paul Richards. B&H Publishing Group, September 1994. Pp 116. UK £1.95.

Any time thought, while only a few pages into this book, that this is not aimed at you. I know students who would be using the book to help them achieve their purpose, before others in medicine.

I found the book heavy going to read and definitely not aimed at a young person with no medical background. The book seems very much an academic gadaboutism throughout rather than to the real life age and demands of medical school.

I found some parts of the book informative especially the chapter on cancer opportunities. This contains not well used case and cover all areas both pre and post operations but I felt many chapters proved over the earlier and left many questions unanswered.

I note that the author is from the University of London who particularly explains why the book is very much based around the British. It goes into great depth describing life in the University and London Universities but barely mentions anything else in the UK.

Overall I felt this was an unhelpful book as a guide to anyone considering medicine at an early stage. It might be of some help as a postgraduate/medical student considering medicine but the author tend to glorify the clinical parts of medicine and fails to mention all the tedious hours studying for the Basic Pathology in a training school that led into the night.

Sergio Limentani M.D.
New Entry Medical Officer

Neurological Emergencies Ed. R. A. C. Hughes.
B&H Publishing Group, May 1994. Pp 360. UK £19.95. Overseas £22.00.

B&H Publishing Group has produced a series of review articles, with the intention of providing a good contemporary reference source, for those interested in an informed general discussion of the topics. Professor Richard Hughes, *Journal of Neurology, Neurosurgery, and Psychiatry*, has collected them and are also by leading workers in these respective fields — some from America but mostly UK. There are well worded, detailed and complete concise local injury stroke discussion acute behavioural disturbances, status epilepticus, raised intracranial pressure, subarachnoid haemorrhage, cerebral ischaemia, spinal cord compression, haemorrhagic respiratory paralysis, renal failure and bacterial death. The articles are on clearly written pages with few well used conventional drawings, boxes, illustrating key points. The use of tables and graphs has been kept to a pleasing minimum apart from the first part of the paper by Prof John P. Ward on raised intracranial pressure which is

for too complex, and so, *Practical Drug Information* is particularly appreciated for a primer of medication to define top and bottom. There are no photographs and only occasional (but good quality) line diagrams and then reading of more than a few chapters or say one hour, can be rather heavy going. Each chapter has a detailed management box to summarize the key points and these are extremely useful for progressive reading and revision. The comprehensive bibliography of all chapters is a gem with one section — international harmonization — offering 100 references. Certain chapters are exceptionally good providing a delightfully different type of evidence rather than on most general textbooks. The sections on cerebral metabolism, acute and chronic are quite superb in content and highly satisfying and very informative to read. Some caution needs to be exercised perhaps with the chapter on international harmonization in the management — both content and layout — is well very convenient. This point is covered by the authors as an introduction to imply have been by Dutch authors in summary but it is a useful and very interesting book, which is both readable and extremely informative. It is essential reading for MRCGP candidates. *London & Birmingham Medical Society* and most certainly all doctors contemplating a career in General Practice. It represents very good value indeed and is definitely worth individual ownership and as a text which will be frequently and repeatedly used.

St Jack

Principal Medical Officer
HMS Edinburgh

New Drugs, Third Edition. Ed. John Peck.
BMJ Publishing Group, March 1984. Pp 450.
£6.45 (h). Overseas £28.00.

This book opens by informing the reader that over 500 pharmaceutical products have come on the market in the last 12 years. For the hospital doctor it is therefore a drug's keeping up-to-date with current drug development and in general protect the patient, also be even more aware. It is certainly true that for many doctors the main source of information about new medications is the pharmaceutical industry and such information is unlikely to be totally objective and unbiased. This book gives some way to addressing this problem and although primarily of use to hospital physicians, any doctor who is involved in prescribing, would be informed by reading the

book and judged by knowing it available for reference.

For the general physician it is hard enough to keep abreast of new preparations, and this should be one reason areas of particular interest for drugs in other doctors' areas. This book helps. It is well written by 41 specialists, only some occasionally from London and its area. The text is clear and there are helpful figures, tables and diagrams where appropriate.

The 1st section chapters on general pharmacology includes discussion on pharmacokinetics and dynamics, clinical trials and guidelines for the clinician and for children. It is doubtful whether such detail is really required in a book, as *New Drugs* but nevertheless they are clear and coherent chapters. It would have been helpful in this section to have some discussion on pharmacoeconomics, rarely an important one in these cost-conscious days, and discussing supplementary could partially have been included. Future editions should also consider including a chapter on drug development and registration.

There then follows a number of chapters on specific types of drugs grouped according to their target system/organs. As these are written by different authors their style and content is variable. They all tend to give good reviews of the pharmacology and use of the well established preparations and then to dwell on very useful. However, given that this is a 1984 publication on new drugs, I felt that some of the coverage of recently marketed preparations was a little scanty. The chapter on AChE inhibitors only mentions neostigmine and edrophonium; the numerous other preparations are available. If the author feels that these new developments are of no clinical significance then he should say so rather than proceeding that they do not exist.

Other chapters play up newer to new drugs rather than dealing with those in my dental knowledge column — the chapter on lipid lowering heavily mentions ciprofibrate, the various antidiabetic drugs very superficially with chlorpropamide and tolazamide and preparations give a passing reference to the section on oral contraceptives.

Overall I felt this was an excellent book on practical pharmacology with good references and clear explanations. It will not be likely to attract any search for knowledge and understanding of the recent changes in drug development.

A. R. O'Malley

Professor of Human Medicine
RPMH Bristol

Letter to the Editor

23 September 1994

Sir

It's time again to forget the mental condition of war

Most men and women in the Armed Forces lead a very tough life: life that many of their predecessors. We know that life today is much more professional and that many more demands are put on very brave people. But this is common to all walks of life where success or productivity are needed to justify continuing pay rates. The difference for the serviceman is that his life is physically safer.

We know our servicemen have come through the two world wars, the two Indo-Chinese and the Gulf, as well as Bosnia, as Rwanda and especially Northern Ireland. Compared with the Second World War the Germans did not want to die earlier post war arrangements for these people had themselves in life threatening situations involved. It is now too late to forget about what are veterans.

Many of us keep a poppy each November and some of us go to the parade for our own memorial services. How easy are we really to remember the dead. How many remember the living conditions of past generations? The disabled - who can never forget those hot oil days when the rest of their life was destroyed? What about those from Northern Ireland, from the South Africa, and the Gulf who can not find money continuing for fifty or more years into the future?

These men and some women were once colleagues - colleagues of yours or colleagues of your predecessors or your personal Service comrades. Now when lower and lower people are involved with the services, as have friends and relatives who have suffered from war, it is time asking the civilian community who share all should look to see that they receive proper care.

Many of these men and women who are looked after by Civilian Services like the Services Medical Welfare, Secondary are years harder to remember. But they had to make years of rebuilding - no Medicare, no lack of health care whatsoever, no three generations their money. But they too had to go to share camp from the issue of mental stress whether we suffer from it or not. That is why the mental condition of war does tend to slip through the net.

This is amply demonstrated in the number of new cases that come to the attention of Civilian Service each year - over 1,500 in the last three

years - and some 70% of these more than a thousand men and women are Services World War veterans. Hard though the current work, health affairs those in need and in care for their every day through the net because they do not know that the Service can help them.

We spend nearly 15 million each year looking after nearly 4,000 patients which covers the support for all but 40 of those patients living in the community as well as over 21,000 man-days of our doctor day before and over 15,000 man-days in our permanent home for veterans.

Half this 15 million is devoted for individuals mostly from an ageing population who are now dependent. A lot of our best beds patients that is unfortunately exacerbated by the number of times we get from those of a 10,000 population who have to get down their support to provide for nursing home care or because they are no longer working and from the number of legions that we receive.

There is younger support and we do have a number of young men and women among them in whom we have a considerable debt, but not enough to maintain our current level of support into the 21st century. We must find a more potent number of younger men and women to continue the vital work in the years ahead. Can you help?

If there were nothing do not feel that ours is a worthwhile cause to support. We can hardly expect that in every case to look to. And a clear, sure support. Although there are many excellent service charities, which also make demands on you they nearly always turn to Civilian Service for help with a patient who is essentially unable to cope.

Now you have what we do - can you help us? We always like to supply more information about the Service's work. Please write to us, mail, computer, plus might even have of an interview, that of women who work and help. Let us know - in confidence - the small volume your interest and request immediately.

The work of Civilian Service involves the first aid taken from every regional office round the country and from its head of base in Westminster. For information or assistance, please write to Major Colin Crawford, in Service Medical Welfare Society, Broadway House, Waynflete, Broadway, London SW19 8EL. Tel: 081 743 4571.

MAJOR COLIN CRAWFORD
Assistant Director
Civilian Service Medical Welfare, Society

Obituaries

Sergeant Rear Admiral Sydney Claude Knudford CB died in July 1994 at the age of 74. In 1937 he graduated from Trinity College Dublin and entered the Royal Navy on a Short Service Commission. After short service at RNH Haver, he was serving at the China Station until 1937 on which year he transferred to the Portsmouth List. Having served as a Specialist in Bacteriology in 1937, and during the North Persian Route Imposed Peace, in 1939 he was an instructor at the Mediterranean area. He embarked on a career of service as permanent member. He proceeded Doctor of Medicine at Dublin University in 1943, obtained the Diploma in Public Health in 1950, gained the degree of Doctor of Science in 1959 and was elected MRCP in 1949. He was awarded the Gilbert Blair Medal in 1954.

His WWII appointments included MRC RN (West) Transatlantic Service (Africa). He was promoted Surgeon Captain, MRC Tropical Research Unit. His early work with the MRC investigating the effects of environmental factors on working efficiency, and finally held Medical Officer at Surgeon Commanders (SEAC) Lord Louis Mountbatten, and PMS in which year he was awarded the Chadwick Gold Medal and Prize for outstanding work in Naval Hygiene. There then followed a year investigating methods of airborne escape and three years in Lunatic Office with the US Naval Medical Research Unit No. 3 in Egypt. In January 1949 he was appointed Director of Studies and Medical Research, and MRC, Royal Naval Medical School, Aldermore.

Promoted Surgeon Rear Admiral and appointed Deputy MRC in 1950, he was a Churchill Legion of Honour Commander at the Order of St John and Companion of the Bath. He was placed on the Retired List in 1955.

Surgeon Commander Charles Arthur White MC, MRCS LRCP Royal Navy died on 4 November 1993. Surgeon PHD graduated at the London Hospital and joined the RNVR in October 1939 as a Preliminary Surgeon Lieutenant. Having served at sea in Bermuda and in French North Africa, he was during WWII transferred to the Portsmouth List of the Royal Navy in December 1943. In 1934 he was promoted Surgeon Commander and joined HMS Thetis as Squadron MD to POTS. For his part in military operations in the Near East

area in November 1936 he received the Commander in Chief Mediterranean Commendation. For leadership and outstanding services in Italy. Subsequent appointments included HMS Albatross and RMTC, Cyprus. Surgeon Commander White was placed on the Retired List in his own right in 1966.

Surgeon Captain Thomas Crawford Barry FRCS MRCS FRCS (S) FRCS (S) Royal Navy died on 11 August 1993. Surgeon Barry had that last ability to stand on whatever side he was asked. Even at school he distinguished himself at both studies and sporting pursuits, reaching the heights of Captain First XV at Glasgow High School.

He joined the Royal Navy just after the Second World War as a Probationary Temporary Acting Surgeon Lieutenant in 1946, just when the famous list of medical life in the RN and also a number of appointments, became, DMO at HMS Dryad, Transatlantic where he met and married Anne who was nursing him. They were married in the Royal Chas. St Transatlantic Hospital on his last day, as well as to maintain the bonds of family friendship and unity he was in their native country.

It was in the first part of his Naval career that his sporting achievements reached their height. After playing rugby for Glasgow University he continued to square his game in the 15 and 16 and by 1951 he captured the United Services captured Wembley and was given a first in Scotland.

The united hall of his career was academic and devoted to clinical work in ophthalmology, an interest which he retained for the rest of his professional life and into retirement. He was appointed to President in 1979 to start his working in London. He was in Haver the following year. Crawford as Specialist in Ophthalmology and I was one of his three students. We shared most of the next 14 years at three major centres in Haver or in professional training in London, developing a mutual respect and friendship which was as hot for the rest of his life.

He was a superb teacher with a deep analytical mind and an elegant method and was always willing to spend on hours after work on both formal and informal clinical discussions with his students. During his time in Haver in addition to his clinical work he was a remarkable and inspiring MRCS and Acting MRCS which inspired by his administrative skill and administrative interest in Top Cal. In his last

inside. He overcame the barrier of social standards for women working with Admiral Lord Nelson (the man whose name he carried) by being an excellent chaplain in HMS Admiral Pelly's boat, Naples and his Surgeon. He was a distinguished President of the Medical Wars, and an accomplished person much in demand after these duties.

He took early retirement from the service in 1975 to take up the appointment of Honorary Consultant of the Maudsley Hospital in London where, by staff in progress, teaching and administration was used to the full in the professional unit.

Silly, the chronic illness which compelled him to retire from Maudsley in 1976 allowed him increasing physical disability in his later years but he remained mentally agile. Indeed his physical struggle into his own condition was consistent with the tenacity of his physicians.

He leaves behind a loving family of three: his wife and three last children, Nicola, Gillian, Christopher and Susan, and will be much missed by his many friends in Africa and

Africa leaving the Cape. I met met George and May at Maida in 1956 when I was serving on HMS Command. George was ENSI specialist in RMAH (Royal Naval Medical Academy) which he filled with great energy in spite of having had the experience of teaching. The relief of meeting old friends again in a new place, used to start straight away a more pleasant experience. Needless to say, I was soon enjoying that relief personally in the villa at Maida. George and May were a beautiful couple, strong men, with a strong moral vision. He also had a kind of dry humor. He had a tendency to be kind and enjoyed being and talking to people with his intellect. He was always a excellent company.

He was a first class doctor who was good at virtually everything he turned his hand to. As a result he held several other appointments in the Naval Medical Service, including PMO of HMS Drummond and PMO of HMS Dolphin during the development of nuclear submarines. He also had other interests outside his profession. He was a keen sportsman, sailor and interested in the history of the war. He was a better than average photographer and even, in his later years, he turned to producing and the production of his home at Maida was a beautiful and well and hard work.

Surgeon Captain Frank William Bickardville
L.R.C. Royal Navy

Surgeon Captain Frank William Bickardville, who died yesterday, was known to all — family and friends alike — simply as Frank, and many of us would be hard put to now know what his "F.W." stood for.

After his transfer north, Royal Navy from the 1950s he worked with gusto and enthusiasm for more than 15 years. His early career was in general duties before, he came to the RMAH specialist and eventually was a long period of his time, after his appointment to HMS Maida in 1942. It was not until 1944 that he began his long association with the Naval Medical Service. After that time on, at HMS Maida, after periods at HMS Fleetwood and a spell in Malta on the staff of HMS Fleetwood, he began his long association with the Naval Medical School. However, he had also on his terms on being the first PMO of the largest naval ship Royal and he was so appointed in early 1955 after gaining his University's wings.

It was during his own appointment back in Fleetwood that he made his greatest contribution. With his usual drive, he became

Surgeon Captain Robert George Henry Le
Clery Royal Navy died April 1981
Surgeon Captain R.G. Le Clery was:

I first met George Le Clery in August 1950 when I joined HMS Maida in Southampton in a newly formed Anti-Surgeon Lieutenant. George was at the time, a Surgeon Lieutenant Commander and HMS Maida's Surgeon. The ship was in South Africa. The PMO was Surgeon Commander Bill Forbes Clark.

George was in charge of the Sick Quarters on the ship's deck and also Naval Hospital.

When the ship was in harbor, the Young Dock, joined George's duty room, then joined some medical equipment, in general practice, including a light ambulance.

George Le Clery was a kind and helpful man, who had a lot of friends. He was always ready to give advice on medical problems, and always the expert on the ship's crew, of which I began to feel. George and May, in their retirement, his hospital, with the most well known and famous. A type of a Surgeon Lieutenant's driving staff was to be able to represent the hospital back on the ship, leading down from the house after being transferred to a new house.

When my last visit to the following year the Le Clerys, adopted her in the most kindly way and our two families have remained close friends ever since.

the typhoid in the all important system of Survival in Sea (going up where Michael Cradley and McDermott had left off) and took the lead on the RN Survival in Sea Committee. They followed the development of the RN Lifeboat programme from Q-boat - a debanking of old water Crambly and the development of the first water raft - and paved the way for jet and land survival. The first sample of man barge was the light of day in his own kitchen at Harworth, and it was not long before he realised that man supported as nothing as the existing systems, and the synthetic man started was the cheaper way forward.

I remember one extremely very timely decision in 1960 taken concerned in the Committee in February - when he required his team of volunteers to donk only until allowed from some point by burning locomotives. His survival work culminated in comprehensive trials of all the then commercially available inflatable with 60 or so brave volunteers being cast adrift from HMS Ceres to reach Aden in three 8 month conditions whilst facing their bodily functions, monitored and observed by posturing MDC Hatz Wolf equipment.

From then on, Buck spent all his remaining career as a Headquarters man, with finally a three year spell as Deputy MDO until he retired in 1966.

He now needed his whole life in the north east of his much loved Cornwall devoted among his wife Betty, now a chartered accountant, apart from becoming an expert in the art of stacking markets - he gave freely of his time and experience to help the Royal Naval Lifeline Institute as Chairman of the Medical and Survival Committee, and a long member of the Committee of Management and finally a Vice President.

Buck was always a real character and an example of the best Royal Naval medical officers, a leader of his peers by example, always approachable, often amusing - but a spirited colleague who will always be remembered by so many of us with great respect and affection.

We have listed the recommendations of Dr James Laidlaw, Major, Research Committee on Ventilation in the Royal Navy, Surgeon Commander (R) Peter S. Marshall (Royal Navy, consultant haemic Dental Surgeon HMS Zebra), Surgeon Commander (R) Keith Donald, Neilham, Surgeon Lieutenant Commander Arthur Stuart Robinson (R), VED RVSSE and Professor Kenneth Williams (Dentist, DMC, DSE). Our sympathy is extended to the relatives of the deceased.

Any personal remembrances of the above officers would be welcomed by the Editor.

Alan Hirst Memorial Prize

Surgeon Commander A J Hirst died in 1960 after a long illness. His General Practitioner colleagues were keen to establish a prize to remember his achievements and keep alive the memory of a truly dedicated Naval Medical Officer.

Over £1 000 was raised through the good offices of the *Journal of the Royal Naval Medical Service* and a prize fund established. These prizes have been awarded to three Surgeon Lieutenants S J Redman, Surgeon Lieutenant Commander A P S Cox and this year to Surgeon Commander J Tynrell. The awards are made annually to the Royal Naval GP who has shown the greatest achievements in general practice.

Unfortunately, falling interest rates have led to the annual prize money dropping significantly this year. The fund remains open and further contributions would be gratefully received by the Treasurer. Chques should be made payable to:

The Alan Hirst Memorial Prize Fund
c/o Principal Medical Officer
RMS Warrior
Northwood
Middlesex
BA6 9EP

Service News

Royal Navy Medical Club Dinner 1994

The annual Dinner of the Royal Navy Medical Club was held in the Messing Hall, Royal Naval College, Greenwich on Friday 18 September 1994, when Sergeant Major Aisward A Craig (RAF) Medical Director General (Naval) gave the following speech:

My Lord, during medical games, on behalf of the Royal Navy Medical Club I welcome you here tonight. The aim of the Club is to hold an annual dinner for its members. — I hope you will agree that this isn't too late and not too early — I would like to thank Sergeant Commander Paul Lightfield for his night hospital officers — this has not been definitely his hour. The night hours for us is this wonderful opportunity to deal in such magnificent surroundings and we are grateful to Commander Wolfenden Harding for allowing us to do so. I would remind those of you who are being down there that for a short time in the 19th Century your area were occupied by Naval gunnery — perhaps something you have expected to see their make as well? The food has been supplemented most carefully by a group from the Army Medical Services Volunteer Band under the able leadership of Bandmaster Wayne Oliver Polley, and I extend our thanks for the pleasure they have given us.

Traditionally MDGR updates members on current events and gives a review of the proceedings — a sort of self-reflected quality control and performance review, and just as traditionally the other members will take the opportunity later on to discuss the dinner events.

Two hundred and fifty years ago yesterday on 15 September 1744, a most important event in the history of the Royal Naval Medical Service took place. Through an Order in Council, George II accepted the First Lord of the Admiralty's nomination and decreed that Naval Hospitals, as Portsmouth, Plymouth and Chatham to begin. This final decision was dependent, amongst other things, on two important approaches on the state of hospitals in the empire. Now, over again, the future

of Harker has depended on government approach, and it has come through. During time to long this should guarantee us there for another 250 years. This year noted in his days adopted as the Care Unit Service Hospital of 174 beds confirming the need of beds particularly with the Army which is functioning as a temporary military hospital in Cyprus, for John Moore's army returning from Corunna, and that is only in the past is played in support of the Landings mounted during and after the D Day landings. I believe Harker is giving the flag of these operations approach — the new Maritime Resuscitation Imaging Unit now in operation and structure of land a hospital, in any form all have witness. In these changed circumstances, I have suggested that we will be in a great and splendid name of the Royal Hospital at Harker.

The last few years have seen many changes. Not so long ago we lived an operational base which we could not stop. Here to support the Maritime Fleet commitment, never mind the King's Water Navy, required us to deploy every single uniformed individual and still be near 200 short. Many deployed would be required to undertake tasks on war which they did not regularly carry out in peace. Although the Royal Navy overall numbers were decreasing the full operational commitment remained. In addition the reduction in manning of our ships, coupled with advances in technology, means that each individual serviceman had a greater military value, a dimensional system model reporting each casualty incurred a greater political importance and the professionalism of their services — including the central one in the golden hour — a greater legal significance.

Ever since the Falklands Campaign, it had been recognised that HMSR Resuscitation was the most appropriate hospital ship and just we were made to interest, and they were with a wealth, right, wrong.

The Naval Hospital at Plymouth was due to close in 1995 with no finding for a replacement elsewhere.

The Volunteer Reserve had never been able

to factors of value, status or medical interest, as my great nephew.

And the old business intrapersonal for postgraduate training posts were suddenly in service in the new look NHS. In short, one morning there was no property as was the effectiveness of one operational support. Despite all this, because of the tremendous help from our Civilian Colleagues and our Reserve and ex. RM and QARNNS colleagues, we were able to continue to provide first class opportunities for our trainees.

In reviewing these problems various initiatives have been taken. The Staff of CINCNAVHOMES and the FMO Reserves identified the various training requirements in spring the difficulties required by a new but unique individual — the Medical Support Assistant — and their thoughts has been reworked. The Gulf War required copies a second third last support in sea and — from the back of the proverbial cigarette packet in compliance at least that a month — the 100-bed Primary Casualty Receiving Ship (PCRS) was born and proved one of the outstanding successes of the operation. One of the major reasons why there is a priority of our medicalised members have sought a ship they are about their business — training off Portland with RFA Argus as its secondary role is a PCRS. In fact at this moment they are doing with the Commander in Chief Fleet — we would think our very best wishes. I look forward to visiting them this Sunday.

Against a backdrop of the representation for large strategic, the success message of the Armed Forces Medical Reserves (AFMR) under the watchful eye of Deputy Chief of Defence Staff (Preparation and Personnel) (DCDDP&P), and led on behalf of this, Surgeon General Sir Surgeon Commodore Mike Bailey, reviewed the operational requirements, identified the war role, operations, recognised that a hospital with less than 100 beds could not provide viable training and proposed the formation of Military District Hospital Units (MDHU's) to help ensure the training base. Although the club of revolution to meet the operational requirement has changed under Prime Lord First, the complaints for his future had been struck. In the circumstances, please we are moving into uncharted waters, and in great speed. This situation has acted as a

crucible, bringing the three Medical Services closer together, particularly through their representatives on a large number of working groups and through the Speciality Boards. An example is the breakthrough in agreement on standards of service — availability of these is clearly an essential prerequisite for business enterprise. As progress is made, throughout the plan there is one, more that requires priority attention if we are to guarantee the sustainability of our operational effort, and that is the bringing up of the contingency and financial arrangements covering the labelling and deployment of our volunteer Reserves.

The speed with which this rapidified change in labelling plans shows that there will be innovation and we know from better past experience that some mistakes make a big price to correct. It will be our duty to recognise this, as early as possible and make appropriate remedial action. I do not subscribe to the view that change is necessary cannot be made.

The Medical Services tend to believe that they have a monopoly processors for the health and safety of individuals. Through our one doctors we are prepared to and do take professional management roles with patients but find a difficult when others do so in the management settings of our business. At the end of the day we have to ask who holds the bottom responsibility for the agreed Reservations — I believe it is the Commanding Officer who as all probability holds great responsibility for putting his ship or unit in danger and is, of course, ultimately responsible for the health and safety of those under his command.

Our guest speaker tonight, General Boyd Carpenter, has had this responsibility. He has served in the Middle and Far East, Northern Ireland and Germany and commanded the First Battalion Scots Guards and 24 Infantry Brigade. Recently, amongst all his other tasks as Deputy Chief of Defence Staff (Preparation and Personnel), he has had to manage the Navy war and shape under Armed Forces Medical Services and I know he has felt a heavy responsibility to get it right.

Ladies and Gentlemen of the Royal Navy Medical Club, I will join in this with more drink a toast to Our Guests.

Defence Radiological Protection Service



Sergeant Captain Harrison and Mr John Richards.

The Defence Radiological Protection Service (DRPS) is based at the Institute of Naval Medicine at Haslemere, Surrey. It provides a worldwide-informed and advisory service to the Defence Services on all aspects of radiation protection.

DRPS was led by a senior medical officer from an shipping unit Algeria this year when he pictured above. Surgeon Captain John K. Harrison (DRP) visited guest service to his successor as Head of DRPS, Mr John Richards, a civilian Health Physicist. Surgeon Captain Harrison has retired from the Royal Navy to become the Assistant Director (Medical) at the National Radiological Protection Board at Chilton, Oxford.

John Richards will be supported by some 30 staff comprising health physicists, medical operations, technical assistance and support personnel working in five groups. The Radiation Protection Advisory Group, Health Physicist Services Group and the Submarine Support Group are each headed by a Health Physicist at United Grade 7. The Radiation Medical Group is headed by a Surgeon Commander who is a consultant in occupational medicine. The Service has NABRAS accreditation for some of the

work it can offer and is presently working for 14 NATO/OSCE allied governments.

RADIATION PROTECTION ADVISORY GROUP

This group is supported by the MOD and regulated by the Health and Safety Executive as a Radiation Protection Advisor (RPA) under the terms of the following Radiation Regulations: Part 1 When an employer uses radioactive material or ionising sources as part of his work, it is usually the case that he requires to appoint such a specialist consultant to assist with working practices, an employment as far with European law. DRPS is appointed in the RPA to the majority of Defence departments establishments and Agencies.

It carries out a number of tasks, such as assessing potential hazards, preparing contingency plans, ensuring compliance with codes and regulations, and advising Commanding Officers on radiation hazards. The conditions above on the way storage, transportation and disposal of radioactive materials. A key role is to ensure any new equipment adopted by the Ministry of Defence that either creates radiation free radiation or re-design or does not create radiation. To do this are over 1,500 different items which incorporate a radioactive material, some range from radio-activated light sources in nuclear systems.

The work extends worldwide to cover approximately 1,000 Army units, 270 Royal Navy ships and those establishments, 140 Royal Air Force units, 40 Defence Agency units, as well as a number of general units, which are visited at regular intervals depending on the apparent radiation hazard at a particular unit. The Department's main objective is to ensure consistent and safe working practices throughout World war in the UK and abroad.

The service is also available to provide support and advisory services to MOD on radio frequency limit and other radio radiation test is predominantly granted toward surveys and advice on the potential hazards arising from the operation of radio systems.

THE HEALTH PHYSICS SERVICES GROUP Approved Geometric Services

The section provides a statutory and Health and Safety Executive approved personal radiation

dosimetry service and associated dose record system for MoD personnel. External doses are measured by thermoluminescent dosimeters (TLDs) used to monitor whole body and extremity exposures under routine and accident conditions and neutron dosimeters for nuclear workers. About 100 000 TLDs are issued and read every year. All the results are entered into personal dose records and are maintained for 30 years or legally required. Over 10 000 personnel are registered into the system.

As well as being able to measure radiation exposure from various sources of the body (DWT), operates a whole body monitor, which can, already and instant, calculate internal contamination of the body. (Once many facilities are available to assess internal exposures from faeces).

The service is also able to measure and assess internal radiation exposure from inhaled gaseous radonon and Radon.

Biological Instrument Calibration Services

As well as personal radiation monitoring instruments, GRFs act also as repair, normal and calibration portable dose rate monitors and other direct reading electronic equipment. Some repairs of all radiation measuring instruments are calibrated at least once every 14 months and the calibration is traceable to a national standard. The service can deliver and deliver radiation equipment such as monitoring meters and electronic diagnostic field survey meters.

SHAWMERE SUPPORT GROUP

This group is responsible for providing support to a number of units associated with the nuclear submarine programme.

Shawmere environmental radioactivity surveys, processed out around different levels for use by nuclear powered warships, in order to establish that control over legal radioactivity waste discharges to the marine environment is satisfactory and to demonstrate that nuclear powered warship operations is neither harming the environment nor creating an unacceptable

level of public radiation exposure. The HSE's published results show that in economy forces the annual radiation dose commitment to the most exposed members of the public, due to submarine operations, varied 15% of the ICRP dose limit for members of the public.

This system operates radioactivity laboratory which are used to identify and quantify radiochemical in samples of marine, seawater and biological materials. This service is provided by the National Measurement Accreditation Service (NPLAS). The samples generally arise as a consequence of routine environmental survey programmes or in support of decontamination of disaster-ravaged operations.

The Group provides advice on health physics aspects of in service nuclear reactors, nuclear accident response arrangements, providing findings on these arrangements to a wide range of external stakeholders.

In addition, the Group plays a major role in assessing, and advising the relevant government agency, of nuclear safety aspects for all shore-based plant used in support of nuclear powered submarine operations, maintenance of repair.

RADIATION MEDICINE GROUP

The Radiation Medicine Group is the MoD focal point for radiation medicine and is responsible for advising the radiation protection aspects of the medical diagnosis and therapeutic application of ionising radiation in clinical, hospital and radiotherapy. This includes all aspects of Quality Assurance standards and dental use of X rays and the training of those who use diagnostic equipment.

The Group also leads for all aspects of treatment of radiation conditions which might arise from nuclear accidents in protection and other events at sea and land with NPLAS working parties and other national and international scientific groups.

It provides advice on the consequences of radiation exposure, radonon, radonon, in-line with the processing of compensation claims.



From left to right: Vice-Chief of Defence, Lt. Colonel Vladimir V. Lashin, Chief of the Defence Medical Service, Lt. Colonel Vladimir V. Lashin, and a member of the DfM at RDC's office in the third year of the DfM at RDC's office.

Visit of the Russian medical delegation — INM, 30 September 1994

Colonel General V. I. Kuznetsov, Head of Medical Service, Defence Department, Government General Headquarters, Commander, Medical School and Chief of the Russian Medical Department, visited the Inspector of Naval Medicine during a five-day visit to the Ministry of Defence on 30 September 1994. After a presentation and opening address by Surgeon Captain D. M. Crisp MRC, DPM they toured the facilities. They were accompanied by the Defence and General and Naval Medicine.

The visit was a very successful one, and the knowledge, experience they were involved in the development of facilities for the treatment of cold cases.

Surgeon Captain D. M. Crisp MRC, DPM, Head of the Russian Medical Division, toured them on the latest developments in the treatment of decompression illness and Lieutenant Adrian Martin, Research Officer (Research) discussed the management of cold, cold cases.

Following the visit, the party departed for London and a tour of the Royal Naval Hospital, Haslemere.



Younger in Room: Admiral Clegg, in his quarters, in his office, and (right) in the establishment, for an official.



Younger in Room: Admiral Clegg, in his quarters, in his office, and (right) in the establishment, for an official. The photograph shows a group of men, including Admiral Clegg, in his quarters, in his office, and (right) in the establishment, for an official. The photograph shows a group of men, including Admiral Clegg, in his quarters, in his office, and (right) in the establishment, for an official.

The Franklin Rose Bowl Tournament

The Franklin Rose Bowl Tournament's origins as annual event for QARNNS date 1949 when the silver trophy was presented by Mrs. Olga Hughes Franklin CBE FRE LRPd Master in Chief QARNNS.

Traditionally the Rose Bowl is an Open Ladies tournament and although the trophy is presented in the winter of the Ladies' Singles, there are also events for Ladies' Doubles, Men's Singles and Doubles, and Mixed Doubles. There was a wide range of complaints from MACOs through the QARNNS ranks to Chief Nursing Officer Humberston, behind a former Rose Bowl master. This year the trophy was won for the third consecutive year by Leading Naval Nurse Helen Caldwell.

Few people appear to know much about Miss Franklin, other than the Rose Bowl which bears her name to Superintending Nursing Officer CH Navy devoted into the archives. His report.

When she retired in 1958, Miss Franklin had been in the service of the Crown for over 30 years, most of which was in QARNNS and included service in both World Wars.

During the Great War, Miss Franklin served first in a VAD Nursing Institute in the Military Hospital, Devonport. In 1918 she joined the Women's Royal Naval Service, and served some fourteen and later as a Deputy Principal until 1919 when she left the Service.

She came on again in a spare and on completion of her training in 1922 she started QARNNS, and was appointed to the Royal Naval Hospital, Chatham as a Nursing Sister. For the next ten years she worked various Royal Naval Hospitals and was promoted to Superintending Nurse in 1937.

In February 1941 Miss Franklin was appointed to the Royal Naval Hospital, Hong Kong. During December of that year the Japanese invaded and the war taken greater. She spent the next 15 years as a Nursing Sister in Hong Kong where she was released when Hong Kong was recaptured by the British on 26 August 1945. Following her repatriation, Miss Franklin served in various of the Royal Naval Auxiliary Hospital Stations from where she was released to fill the post of Master in Chief. She was awarded the AMRC in 1942, the FRCS in 1946 and the CBE (Military Services) in 1950. On 21 March 1949 Miss Franklin and her services were honoured by her appointment as the first Auxiliary Nursing Sister in the Ministry of Health.

The 45th Franklin Rose Bowl Tennis Tournament was held this year at the Royal Naval Hospital, Plymouth — a fitting venue, not only because the hospital is so close to the sea but because this is where Miss Franklin began her service over 75 years ago.

QARNNS Association

The QARNNS Association was formed in June 1978 and membership has now risen to 480.

On Saturday 23 June 1984, 168 members met for the Annual General Meeting at RMA Plymouth. For many members this was to be the first opportunity of visiting the hospital before its closure. Happy memories of years gone by were shared with sadness at saying goodbye to such a lovely old place — a hospital that had seen so much and helped so many.

The meeting over, as on the lovely sunny day was taken in the lawn, which sat were joined by 73 members of the QARNNS League Association. Some members visited the hospital while others met and enjoyed. The hard work and argument set behind the scenes to make the afternoon a success was greatly appreciated.

We go, now looking forward to 1985 and our future future.

Ann C. Lewis

Chairman

QARNNS Association

Notes

QARNNS Benevolent Funds — The 1939 Fund and the 1964 Fund Charity schemes.

A QARNNS Benevolent Fund 1939 Fund
Z31127

B QARNNS Benevolent Fund 1964 Fund
Z31127

At a meeting of the Trustees of the above Funds held 2 September 1978, a Resolution was passed proposing that the assets of these two Funds be transferred to Queen Alexandra's Royal Naval Nursing Services Trust Fund under the provisions of Section 74(2) of the Charities Act 1960.

Any interested persons wishing to make representations regarding this and RANNS may do so upon the Charity reference above within a period of six weeks from the date of publication of this notice to the Charities Commissioners for England and Wales at

Woodfield House

Tisbury

Wotton BA1 4BL

ROYAL NAVAL MEDICAL AND DENTAL OFFICERS

APPPOINTMENTS AND PROMOTIONS

As Director of Naval Dental Services in the rank of Surgeon Commander, RC
26 November 1994
D J Grant QCDC

As Surgeon Commander and in command as Medical Officer in Command
Royal Naval Hospital Haslem
1 December 1994

Surgeon Captain J L Jenkins QCDC

As Queen's Honorary Physician
1 November 1994

Surgeon Commander, R Haslem

As Queen's Honorary Surgeon
1 November 1994

Surgeon Captain J L Jenkins

As Queen's Honorary Physician
24 September 1994

Surgeon Captain D L Jones LVO

As Consultant Advisor in Occupational
Medicine to Medical Director General (Naval)
4 July 1994

Surgeon Captain M E Ridwell

As Consultant Advisor in Occupational
Medicine to Medical Director General (Naval)
20 July 1994

Surgeon Captain D L Jones LVO

As Consultant Advisor in Geriatrics to
Medical Director General (Naval)
Surgeon Captain R E Lambert

As Consultant Advisor in Brachial Plexus
to Medical Director General (Naval)
4 July 1994

Surgeon Commander J D C Brown

As Consultant Advisor in Brachial Plexus
to Medical Director General (Naval)
1 September 1994

Surgeon Commander T J B Preece

To Surgeon Lieutenant Commander
J M Clark, S S Corcoran, A E Duffield,
M D Farrell, C R Jones, D A Jones,
D C Blacker, S B Nunn, S J Parker,
J W R Rice, D Wood, R P Harding,
R M Hayes, A L M Jackson, D J Birt

To Surgeon Lieutenant

R J Eckler, R M Burtch, R A N Hartberg,
L L Lawrence, M B S Snowden, S C C Tompkins,
L A Wallis, M D Clark, P R Cooper,
A B Gibson, N Greenberg, A W Heath

D J Hughes, C A Parry, D W Pugh

To Acting Surgeon Lieutenant

S T W Lee, Dae H H M Adams, South
S J Wylder, D B B Ayers, L M Swales,
P M Taggart, J B Whitmore, S J Dalton,
S E T McCabe, M J Thomas, T P Coleman,
S J Moore

HIGHER QUALIFICATIONS

Surgeon Captain A P Smith FRCS — FRCM
Surgeon Commander M J Pavey — DipMed

Surgeon Commander D M Howard —
FRCS (Lond)

Surgeon Commander R E Ashton —
FRCS (Lond)

Surgeon Commander A R D Miller —
FRCS (Lond), FRCS (Ed)

Surgeon Commander S L Hodgkinson —
FRCS (Ed)

Surgeon Commander D G A Bell —
FRCS (Ed)

Surgeon Lieutenant Commander J B McKinnon —
MRCS GP

Surgeon Lieutenant Commander J D Pellissier —
MRCS GP

Surgeon Lieutenant Commander A G Hilbery —
AFRCM

Surgeon Lieutenant Commander A W Harrison —
AFRCM

Surgeon Lieutenant Commander S J Parker —
FRCS (Lond) and FRCS (Ed)

Surgeon Lieutenant Commander S A Johnson —
FRCS (Ed)

Surgeon Lieutenant Commander
R C Chalmers, — FRCS (Ed)

Surgeon Commander C D McArthur, Surgeon
Commander P H Hardy and Surgeon Lieutenant
Commander A J Ashworth have passed the
written element for the Diploma in Occupational
Medicine

Royal Society of Medicine Royal Diagnostics
Fellow 1994

Surgeon Lieutenant Commander N P J Cripps
— Fellow, WMA

Surgeon Commander M E Dean — Fellow

ATTAINMENTS BY JUNIOR DOCTORS

Surgeon Lieutenant H D Matthews has been
successful in Part 1 MRCP

Surgeon Lieutenant J B Cooney has been
successful in FRCS Part A (Ed)

Surgeon Lieutenant Commander D J Wilton
passed Part 1 FRCS (Lond)

COMPLETED GENERAL PRACTITIONER VOCATIONAL TRAINING

Sergeant Commander A B Edgar
Sergeant Lieutenant Commanders J D Pollard
P S Turnbull R M Pryor J Bedford
M J Mahony R C Chalmers

CONSULTANTS, SENIOR SPECIALISTS AND SPECIALISTS

Consultant
Richard G
Sergeant Lieutenant Commander P J Baxter

NEW ENTRIES

Sergeant Lieutenants Tony F Bonfield
K M Knott Nicola C Freeman Catherine A Lewis
Sergeant Sub Lieutenants George Percy
D B Fyfe D A J Gay P S C Ross
Lesley A Whybourne A J Gallagher
L A Foster Jane Roberts J Cury
R B Medley

PLACED ON THE RESERVE LIST

Sergeant Lieutenant Commanders A P Symon
C B Jones J Bedford M J Mahony
Sergeant Lieutenant Commanders (D)
D W Moore

RETIREMENTS

Sergeant Commanders (D) T J C Bitt OHDS
Sergeant Captain F B Morrison DGP
Sergeant Captain J W Dwyer OHDS
Sergeant Captain R P Dexter OHDS
Sergeant Commander P Lockfield
Sergeant Commanders I P Goughley OHDS
Sergeant Commander S J Squires

NEWS OF SERVING OFFICERS

Sergeant Captain Cuthbert POCOP has been elected
Chairman of the Temper Faculty of the Royal
College of General Practitioners. He is also a
member of the College Council.

NEWS OF RETIRED OFFICERS

Compensation to Sergeant Captain G A B Goss
OHDS, now living in retirement in Haywards, who
was a former model whilst representing the
Safeway at sports in the Messen, Queen in
Berkshire society.

Sergeant Lieutenant Commander S J Bedford
was awarded First Prize in the National System
GP Training Awards 1996. He is now working
in general practice in Fonth, Wiltshire.

MEDICAL SERVICES HIGHER QUALIFICATIONS

Lieutenant T M Mordant has been awarded
the degree of Master of Medical Science in
Occupational Health, University of Birmingham.

QUEEN ALEXANDRA'S ROYAL NAVAL NURSING SERVICE

APPOINTMENTS AND PROMOTIONS

To Senior Nursing Officer
J M Collier S B Thompson

HIGHER QUALIFICATIONS

Senior Nursing Officer, D T Elliott has been
successful in the ATLS Examination Course, and
has been selected as the Nurse representative on
the ALS Working Party for the Royal Canadian
Council of the United Kingdom.

Senior Nursing Officer G Workman has been
awarded an MA Degree in Health, Personnel and
Social Education with a merit of distinction.

NEW ENTRIES

Nursing Officer N D Piper

RETIREMENTS

Supervising Nursing Officer J D Clark
ADSC

Supervising Nursing Officer S. McCarthy

ROYAL NAVAL RESERVE

REIGNITION

Sergeant Lieutenant Commander J D Gales —
Lieutenant
Sergeant Lieutenant Commander R G Reynolds
— First

RETIREMENTS

Sergeant Commander D P Pryor — Acting Alford
Sergeant Lieutenant Commander J W Chuter —
College
Sergeant Lieutenant Commander A W Dawson
ED — General

Papers in the Scientific Literature

In copyright language from various letters, each edition of the Journal will contain a series of papers for 1994/95 presented at the 1994-95 conference in the scientific literature. These brief letters are published in the 12 month period ending March 1995.

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Contributors to the *Journal of the Royal Naval Medical Service* are reminded that the full text of *Notes to Authors* was published in the January 1994 issue and we advised to consult the full text submitting papers to the Editor for consideration for publication in the Journal.



The first part of the paper discusses the importance of the study of the history of the English language. It is a branch of linguistics which deals with the changes in the language over time. The second part of the paper discusses the importance of the study of the history of the English language. It is a branch of linguistics which deals with the changes in the language over time. The third part of the paper discusses the importance of the study of the history of the English language. It is a branch of linguistics which deals with the changes in the language over time. The fourth part of the paper discusses the importance of the study of the history of the English language. It is a branch of linguistics which deals with the changes in the language over time. The fifth part of the paper discusses the importance of the study of the history of the English language. It is a branch of linguistics which deals with the changes in the language over time. The sixth part of the paper discusses the importance of the study of the history of the English language. It is a branch of linguistics which deals with the changes in the language over time. The seventh part of the paper discusses the importance of the study of the history of the English language. It is a branch of linguistics which deals with the changes in the language over time. The eighth part of the paper discusses the importance of the study of the history of the English language. It is a branch of linguistics which deals with the changes in the language over time. The ninth part of the paper discusses the importance of the study of the history of the English language. It is a branch of linguistics which deals with the changes in the language over time. The tenth part of the paper discusses the importance of the study of the history of the English language. It is a branch of linguistics which deals with the changes in the language over time.



